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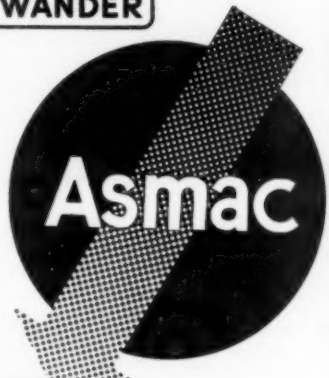
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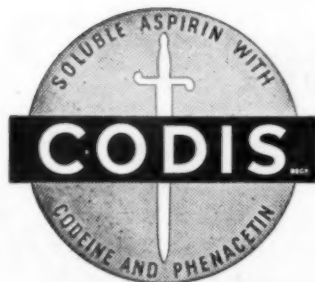
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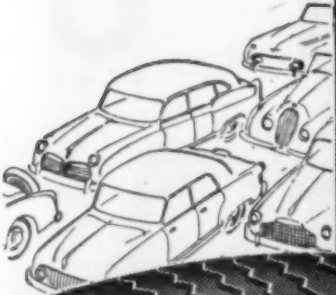


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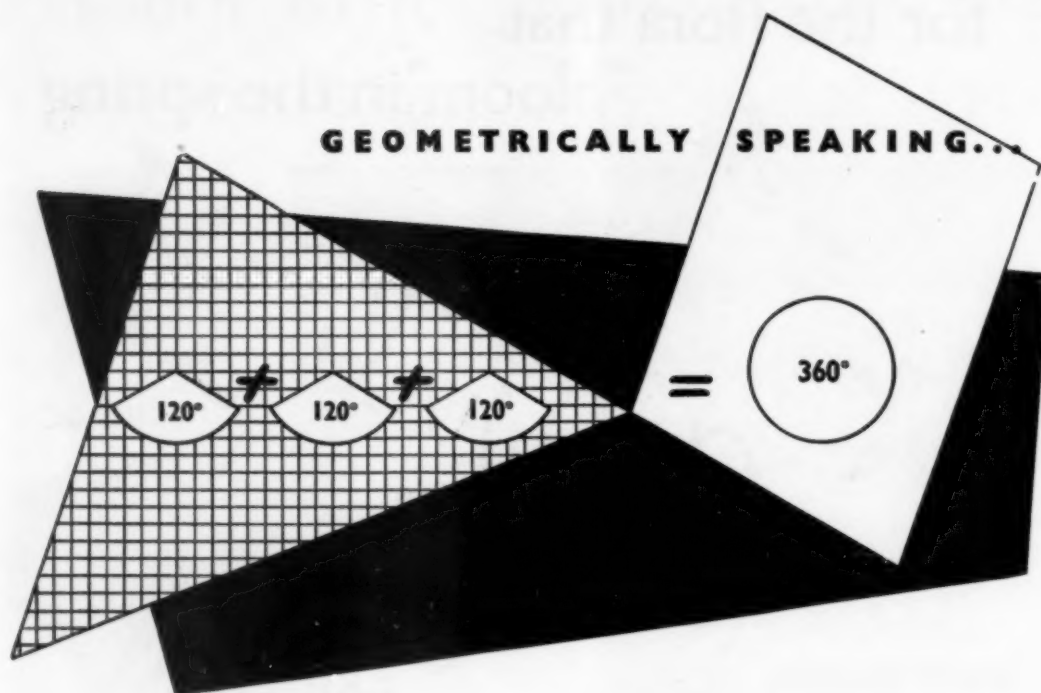


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THE SURGERY OF SEVERE GASTRO-INTESTINAL HAEMORRHAGE

A REPORT ON 129 CONSECUTIVE CASES *

J. F. P. ERASMUS, M.D., CH.M. (RAND)

Professor of Surgery, University of Cape Town and Head of the Division of Surgery, Groote Schuur Hospital, Cape Town

The many conflicting opinions which have found expression on the danger of gastro-intestinal haemorrhage and the action to be taken in the face of it put anyone at a disadvantage who tries to approach the subject dispassionately. It seems more profitable to examine the real dangers of continued gastroduodenal bleeding than to review the many arguments put forward since 1887, when Mikulicz performed the first successful operation for haematemesis.

The dangerous possibilities are rapid deterioration to death from fulminating catastrophic haemorrhage, the development of irreversible oligæmic shock, and the cumulative effect of repeated haemorrhages. To these must be added the effects of oligæmia in precipitating coronary thrombosis, cerebral vascular episodes, lower nephron nephrosis and diminished pulmonary blood-flow with diminished lung aeration. The most striking phenomena in cases with large gastro-intestinal haemorrhages include all these and in addition many of these patients have cardiovascular, renal or pulmonary disease in various combinations. All are subjected to the effects of single massive haemorrhage and many to those of depletion from previous haemorrhages with a more or less prolonged semi-starvation régime.

The gross results of progressive depletion of the stores of haemoglobin and body protein are: relative inability to restore blood volume in an emergency; a consequent tendency to the development of severe and irreversible shock unless early adequate replacement of blood volume is undertaken; a sensitive convalescence marked by poor wound healing; an undue tendency to thrombo-embolic disease, with a threat of cardiovascular, renal and pulmonary complications.

* A paper presented at the South African Medical Congress, Port Elizabeth, June 1954.

The picture is often further complicated by overloading the circulation with massive transfusions in a patient with chronic anaemia, and the irritating inconveniences and even dangers of long-continued intravenous alimentation.

The cases considered in the paper are those which were dealt with in the wards of Groote Schuur hospital in the 4 years January 1950 to January 1954.

SEVERE HAEMORRHAGE FROM PEPTIC ULCER

This group of cases illustrates some of the factors mentioned above. To illustrate them further, a comparison is drawn between cases operated on for gastroduodenal or anastomotic ulcer (1) without haemorrhage and (2) with haemorrhage. For this purpose only that period is used for which complete analysis of all cases of ulceration treated by operation is available.

Catastrophic haemorrhage is uncommon but does sometimes cause death, as in the case of a Coloured female, aged 55 years, in the present series. Dr. A. M. Moll has also recently encountered a rapidly death-dealing haemorrhage from a duodenal ulcer in a European woman of 34 years.

The general position in relation to haemorrhage in cases treated by operation for benign gastric or duodenal ulcer is set out in Fig. 1. Among 92 cases with significant haemorrhage, past or present, there were 9 deaths (one in a case with concurrent perforation). Among 152 cases with no significant haemorrhage, there were 5 deaths (3 in cases with perforation). The lesser operations were more frequently undertaken for reasons of particular gravity than the gastrectomies, so that the comparison of cases with and without haemorrhage

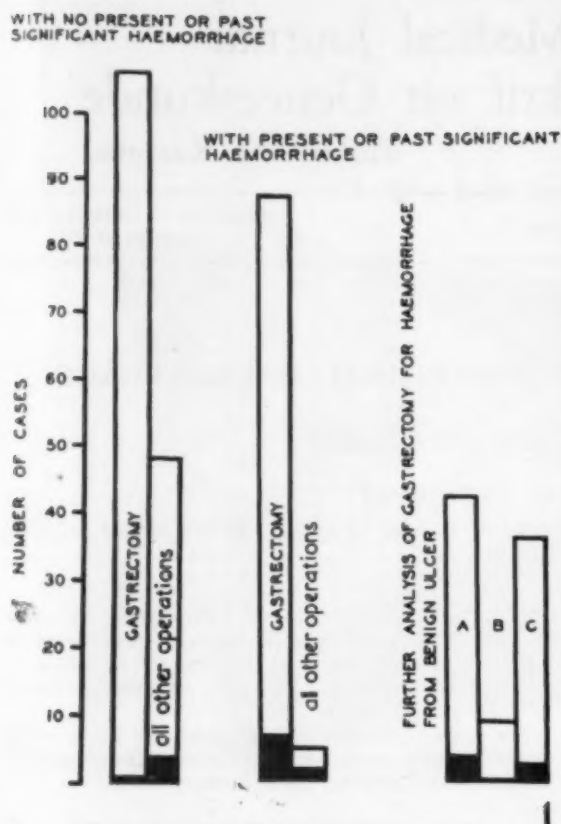


Fig. 1. Cases operated on for benign peptic ulcer. A=Emergency gastrectomy. B=Haemorrhage ceased under medical treatment, operated on before discharge from hospital. C=Usual 'interval' operation. Deaths in black.

becomes even more striking if, for the moment, attention be given to the gastrectomies alone.

Among 87 gastrectomies on patients with past or present significant haemorrhage, there were 7 fatalities. Among 106 other gastrectomies there was one death—from coronary thrombosis. Whence the disparity?

Before an attempt is made to answer the question, further analysis proves of interest. Of the 87 gastrectomies for haemorrhage, 42 were undertaken as emergencies in the presence of active bleeding, with 4 deaths. Two of these deaths could be laid directly at the door of prolonged, pre-operative oligæmic shock. Two were due to leakage from suture lines, but in one this was certainly due to unseemly speed in operating when the patient's condition was rapidly becoming precarious during operation, which was not undertaken until after shock had been profound. Thus 3 of these cases, all over 50 years old, demonstrated quite clearly the effect of prolonged and profound oligæmic shock. The surgeon was called late; blood transfusion, which should have been given in adequate quantities long before, was suddenly speeded up. Whatever may be the correct treatment of alarming ulcer haemorrhage, and there is

much reasonable difference of opinion, one fact is certain, *oligæmic shock must not be allowed to pass uncorrected in its early stages*. The young may forgive neglect of this rule, the elder will seldom do so and will not settle for heroic transfusions at the last minute.

In 9 cases admitted to surgical wards, bleeding had obviously stopped. They were treated medically for a few weeks and operated upon before discharge from hospital in prime condition. None died.

In 36 cases there was no present haemorrhage, but a history of significant past haemorrhages, recently repeated. Mortality was surprisingly high—3 deaths. It seems obvious that here the main common factor was in a depletion response, and that future improvement in results will depend not on operative technique but in better assessment of the physiological status. It would appear that the cumulative effect of repeated haemorrhages is far greater than we have made allowance for in our pre-operative preparation of these patients. Stimulated by work done elsewhere, and particularly (to our knowledge) in the United States, we are endeavouring to start a new era of studies in metabolic balance.

Fifteen additional cases have been treated by emergency gastrectomy. Two of these died. The first illustrated beautifully the complexities of some of these cases:

A European man aged 62 years was admitted to the medical service in a state of collapse and coma. The administration of 4 pints of blood raised the level of consciousness to one of severe confusion and the blood pressure to 100/70 mg. Hg, but all indications pointed to continuation of massive haemorrhage. Gastrectomy was performed for a large penetrating duodenal ulcer with an actively bleeding ulcer in its floor. Blood pressure stood at 150/110 after operation. Slow blood transfusion was continued. On the 1st post-operative day haemoglobin was 12 g.% and blood transfusion was discontinued. Next day the temperature rose to 104° F and the lung fields were moist and the heart fibrillating. The fibrillation was brought under control. On the 5th post-operative day the urinary output fell to 8 oz.; the same day a partial wound disruption was closed. Progressive oligæmia developed and death occurred on the 7th post-operative day.

The second death was also in a white man aged 63 who had bled to stupor and continued to bleed.

SEVERE HAEMORRHAGE ASSOCIATED WITH GASTRIC MALIGNANT NEOPLASM

Massive haemorrhage was treated by emergency operation in 3 cases of carcinoma of the stomach (one ulcer-cancer), and one of large gastric ulcer and associated reticulum-cell sarcoma. The facts of 3 of these are given briefly. The 4th recovered without ado:

A Coloured male was admitted to hospital 24 hours after perforation. Aspiration treatment was adopted and all went well until a 2-pint haemorrhage suddenly occurred on the 6th day. Emergency gastrectomy revealed 2 large ulcers, one in the pyloric antrum, another on the greater curvature. Histological examination showed both to be carcinomatous. The patient is well at the time of writing, 16 months later.

A Coloured male aged 55 years presented with massive, active, repeating haemorrhages and obvious evidence of gross loss of weight. Emergency operation was performed in the hope that the clinical diagnosis of carcinoma might prove wrong. A carcinoma with very extensive intragastric spread was treated by total gastrectomy. The man died within 24 hours.

A European man aged 62 years, with a long-standing history of gastric ulcer, of which there was previous radiological evidence, was subjected to emergency operation for massive haemorrhage. An enormous high gastric ulcer was rapidly separated from the liver, into which it had penetrated. Palpation of the stomach now revealed hard infiltration to just below the oesophagus. The diagnosis of carcinoma was made and total gastrectomy with block dissection of the stomach-bed effected. Histological examination revealed extensions of reticulum-cell sarcoma from the margins of the ulcer, which explained the operative finding. The man was discharged from hospital on the 9th post-operative day and was alive and well 10 months later.

OE SOPHAGEAL VARICOSITIES

Four cases were treated by emergency operation for very severe haemorrhage from oesophageal varicosities. Two were treated by splenectomy; one died, a middle-aged Bantu male, unconscious from blood loss; the 2nd, a European girl of 16, was treated by portocaval anastomosis 6 months later for repeated haemorrhage. A middle-aged European male was treated by oesophago-gastrectomy and a young adult Coloured male by high gastric transection.

OPERATION FOR HAEMORRHAGE FROM OTHER CAUSES

Cases with various causes of severe haemorrhage are indicated in Fig. 2. The occurrence of lesions of the small intestine shows the need to examine the intestine

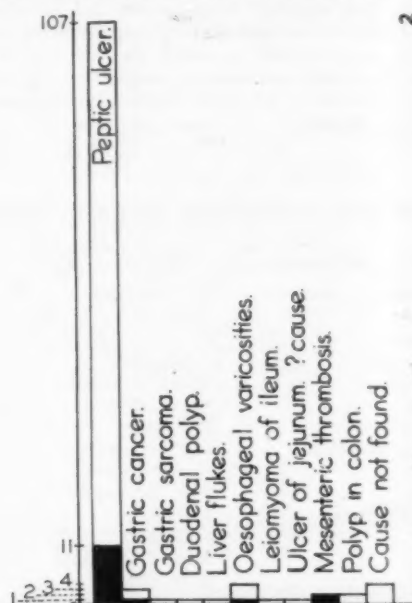


Fig. 2. Cases operated on for severe gastro-intestinal haemorrhage. Deaths in black. Total cases 127.

before performing emergency gastrectomy for haemorrhage. The surprises were all found in cases where the source of bleeding had been confidently ascribed to peptic ulceration. This was so even in the 2 instances of extensive mesenteric vascular occlusion.

In one child (Mr. J. H. Louw's case) repeated hae-

morrhages were known to be associated with infection with *Fasciola hepatica*. In two instances severe haemorrhage from polyps of the colon were dealt with by fulguration through the sigmoidoscope.

The source of bleeding remained unestablished after operation in 4 cases. One was subjected to gastrectomy; in the other 3 nothing further was done after laparotomy.

ANALYSIS OF DEATHS FROM GASTRO-INTESTINAL HAEMORRHAGE

Fig. 3 sets out the main facts relating to 17 deaths from gastro-intestinal haemorrhage over a 4-year period. Two cases died from exsanguination before operation



Fig. 3. Deaths with gastro-intestinal haemorrhage, January 1950-January 1954. Actual cause of death in circle. Ex=exsanguination. Pr=prostatism. IO=intestinal obstruction-(p) previous operation for do. S=profound shock. L=leak at suture line. C=curare. Dep=existing depletion. U=profound disturbance of consciousness. N=lower nephron nephrosis. Pn=pneumonia. RP=perforation recently closed. Sep=septicaemia.

was undertaken. In 11 cases submitted to operation there was profound shock. Two cases had been deeply unconscious and 2 were still so at the time of operation—in fact, no case with gross deterioration in consciousness was saved by operation. Four cases were obviously depleted of protein and blood volume at the time of operation.

The inference from the above facts is obvious, but they tell nothing of the other side of the picture—of the much greater number of shocked and depleted patients probably saved by operation. In assessing the

results it must be stressed that all cases had been rejected by capable physicians for further non-operative treatment.

A PLAN FOR DEALING WITH MASSIVE GASTRO-INTESTINAL HAEMORRHAGE

It is freely admitted that there were errors in judgment, surgical and medical, more especially in the handling of the more serious earlier cases in the series. Even if allowance is made for these, an appraisal of the facts is by no means easy. Conflicting evidence in no way lessens the gravity of the large bleeds we have seen, or of the whole question of gastroduodenal haemorrhage from benign ulcer. A discussion of diagnostic errors and illustration with comments on cases would occupy too much time for the present purpose and must be excluded here, except to mention that our mistakes have included the following: gastric carcinoma (2 cases), oesophageal varicosities (1 case), mesenteric thrombosis (2 cases), leiomyoma of the small intestine (1 case). For serious bleeding peptic ulcer on admission to hospital, a plan of campaign has been adopted from which the results seem to be improving.

Our present practice in dealing with cases admitted for large haemorrhage has crystallized along the following lines. *If the bleeding is still present*, as evidenced by haematemesis, blood transfusion is started immediately and operation carried out as soon as the patient is fit or if it soon becomes clear that improvement is not taking place. With melena alone the decision is more difficult and we can only assess its severity by the effect on the patient. If the indications are that it is severe, we adopt the above course.

If the indications are *that the bleeding has ceased*, we administer blood, wait and watch. Despite certain objections, we have found a fine indwelling stomach-tube and aspiration at half-hourly intervals of use in obtaining early information of resumption of gastric bleeding. This is of course valueless in many instances of duodenal bleeding, and here again the indirect evidence must be carefully gauged. Repeated haemoglobin estimations during the course of blood transfusion seem of value in assessing a continued drain from the circulation. If this is indicated, operation is advised. If bleeding has been severe but does not recur, operation is advised after a course of medical treatment in hospital.

It is fairly generally conceded that emergency operation is more clearly indicated in older patients. Nevertheless, it would be wrong to stress youth too heavily as a contra-indication to this form of treatment. Also, reasoning based too strongly on consideration of acute ulcer, or erosion and chronic ulcer, is apt to be fallacious. Such experiences are illustrated by the instance of a Coloured male aged 26 years, who was admitted to the medical wards with pneumonia and large haematemesis. Professor J. F. Brock urged operation. I was loth to oblige and put the case down as acute erosion from toxæmia. Further large haemorrhage and marked deterioration led to change of heart. Exploration disclosed an unconvincing picture. However, gastrectomy revealed an actively bleeding ulcer on the small lesser curve, classed by the pathologists as subacute. Bleeding ceased immediately and uninterrupted recovery followed.

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Suid-Afrikaanse Tydskrif vir Geneeskunde

VAN DIE REDAKSIE

GEVAARLIKE MEDISYNE : 4DE, 5DE en 6DE BYLAES

Die Wet op Geneeshere, Tandartse en Aptekers, soos gewysig, bevat in die 4de, 5de en 6de bylaes respektiewelik, 3 klasse medisyne wat as gevaarlik bestempel is, nl. (1) vergifte, (2) gewoontevormende medisyne en (3) moontlik nadelige medisyne. Die een bylaag sluit nie die ander uit nie en sekere middels verskyn op meer as een bylaag.

Die gewysigde Wet plaas sekere verpligtings op geneeshere, onder ander die volgende:

Elke geneesheer wat medisyne opmaak moet 'n resepteboek aanhou waarin hy sekere besonderhede moet opteken oor enige medisyne wat hy opmaak wat of 'n vergif,¹ of 'n gewoontevormende medisyne,² of 'n moontlik nadelige medisyne bevat.³ Hierdie besonderhede is die naam en hoeveelheid van elke bestanddeel, die naam en adres van die persoon aan wie dit verskaf word en die dag van lewering. Alhoewel daar oor die vertolking van die betrokke artikels meningsverskil kan ontstaan is die doel, wat die Wet i.v.m. die resepteboek be-oog, in dié artikels opgesom en elke verstandige geneesheer sal, afgesien van die vereistes van die Wet, só 'n resepteboek aanhou.

Elke geneesheer wat gewoontevormende medisyne gebruik, opmaak of resepteer moet in 'n boek genoem die 'register van gewoontevormende medisyne' (wat uitsluitlik vir hierdie doel gehou word) die volgende besonderhede laat inskrywe:⁴ (a) die hoeveelheid van sulke medisyne wat hy besit of verkry het, (b) die datum waarop dit verkry is, (c) van wie en van waar dit verkry is, en (d) die hoeveelheid wat van die hand gesit is en of (i) dit verkoop is (in welke geval die dag van die verkoop en die naam en adres van die koper opgeteken moet word) of (ii) dit in die gewone loop van die praktyk opgemaak of gebruik is.

Die Wet bepaal egter⁴ dat wanneer 'n geneesheer hierdie besonderhede alreeds in 'n resepte- of dagboek aangeteken het, dit voldoende is as hy in sy 'register van gewoontevormende medisyne' melding maak van die hoeveelheid van elke gewoontevormende medisyne wat by die opmaak van resepte gebruik is, en van die volgnommer van die betrokke aantekening in die resepte- of dagboek.

Die register moet tot op datum en in behoorlike volgorde bygehou word en dit moet 'n balans wys wat

EDITORIAL

DANGEROUS DRUGS; 4TH, 5TH AND 6TH SCHEDULES

The Medical, Dental and Pharmacy Act, as amended, schedules 3 classes of 'dangerous' drugs, viz. (1) poisons, (2) habit-forming drugs and (3) potentially harmful drugs, which are respectively listed in the 4th, 5th and 6th schedules of the Act. The schedules are not mutually exclusive; certain drugs appear in more than one schedule.

Amongst the obligations imposed on medical practitioners by the amended Act are the following:

Every medical practitioner who dispenses medicine must keep a prescription book in which he is to enter certain particulars concerning any medicine he dispenses which contains either a poison,¹ a habit-forming drug,² or a potentially harmful drug.³ The particulars that must be entered are the name and quantity of each ingredient of the medicine, the name and address of the person to whom it is supplied, and the date when it is supplied. Although the relative sections leave room for argument, this appears to sum up the intention of the Act as regards the prescription book, and apart from legal requirements it is a wise precaution on the part of the dispensing doctor to keep records in the manner thus laid down.

The medical practitioner who 'uses or compounds or dispenses' any habit-forming drug is required⁴ to cause to be entered in a book called the 'register of habit-forming drugs' (to be kept exclusively for this purpose): (a) the quantity of such drugs possessed or acquired by him, (b) the date of the acquisition, (c) the person from whom and the place from which the same was acquired, and (d) the quantity disposed of and whether (i) by sale (in which case the date of the sale and the name and address of the purchaser must be entered) or (ii) by dispensing or use in the ordinary course of practice.

There is, however, a proviso⁴ that, where the practitioner keeps a prescription book (or a day book) in the manner we have indicated, it is sufficient for him to record in his register the total quantity of each habit-

duidelik aantoon hoeveel van elke soort gewoontevormende medisyne op die laaste dag van Maart, Junie, September en Desember in voorraad is. (Die balans moet binne 3 dae na elkeen van voormelde datums voltooi word).⁵ Die register moet vir 'n tydperk van minstens 3 jaar behou en bewaar word en moet ter insage beskikbaar wees aan persone wat skriftelik daartoe ingevolge die Wet gemagtig is.⁶ Geen gewoontevormende medisyne wat deur 'n geneesheer verkry is mag andersins deur hom gebruik word nie dan stiptelik as geneesmiddel.⁷ Dit mag nie gebruik word nie om 'n gewoonte of drang te bevredig nie behalwe in sekere goedgekeurde inrigtings. Elkeen wat enige gewoontevormende medisyne⁸ of enige vergif⁹ in sy besit of bewaring hou sonder om elke redelike voorsorg daarvoor te tref, is aan 'n misdryf skuldig. Elke geneesheer moet ook aan alle vaatwerk, elke kisse, bottel, omslag of pakkie in sy besit wat 'n stof bevat wat 'n vergif is 'n etiket heg met die woorde „Vergif” en „Poison” daarop.¹⁰ Hierdie vereiste geld egter nie vir enige medisyne wat deur 'n geneesheer opgemaak is en wat van 'n etiket met sy naam en adres voorsien is en waarvan die betrokke besonderhede in sy „resepteboek” (soos bovermeld) aangegeven is.¹

Daar is 'n soortgelyke bepaling wat onder sekere omstandighede die geneesheer wat medisyne opmaak vrystel van die vereiste dat medisyne vir uitwendige gebruik, wat 'n vergif bevat, in 'n houer moet wees wat deur betasting onderskei kan word (d.w.s. 'n „gif-bottel”) en wat voorsien moet wees van die opskrif „For External Use Only—Alleen Vir Uitwendige Gebruik”. Oënskynlik maak die Wet geen voorsiening vir so 'n vrystelling in verband met moontlik gevaarlike medisyne nie; ¹¹ dit is waarskynlik 'n glip.

Ten slotte is daar onder andere die regulasies kragtens Artikel 42 van die Wet op Voedingsmiddels, Medisyne en Ontsmettingsmiddels van 1929 wat geneesheer wat medisyne opmaak verplig om elke pakkie wat kos of medisyne bevat te voorsien van 'n etiket met die naam en besigheidsadres van die persoon deur wie of ten behoeve van wie dit verpak is. „Medisyne” word gedefinieer as enige stof of mengsel stowwe wat, inwendig of uitwendig, as geneesmiddel gebruik word. 'n Geneesheer wat sy eie medisyne opmaak moet derhalwe alle houters voorsien van etikette met sy naam en adres, afgesien daarvan of die medisyne vergifte of ander medisyne wat in die bylaes vermeld is, bevat.

Daar is sekere regsvereistes wat op alle praktiserende geneesheer, of hulle medisyne opmaak of nie, van toepassing is en ons sluit met die volgende af:

Elke voorskrif vir 'n gewoontevormende medisyne moet melding maak van die naam en hoeveelheid van sodanige medisyne wat verkoop of gelever mag word, die naam en adres van die persoon vir wie die medisyne bedoel is en die naam en adres van die geneesheer wat dit onderteken het (en ook sy kwalifikasie), en die datum waarop daardie resep uitgereik is; nie meer as een uitgif van die medisyne mag kragtens die voorskrif verstrek word nie.¹²

Dieselfde bepalings geld vir voorskrifte wat enige moontlik gevaarlike medisyne (maar nie „vergifte” as sulks nie) bestel met die onderskeid dat die voorskrif

forming drug used for dispensing and the serial number of the relative entries in the day book or prescription book.

The register must be properly kept up to date and must be balanced so as to show the quantity of each habit-forming drug in stock on the last day of every March, June, September and December (the balancing to be completed within 3 days of those dates).⁵ The register must be kept and retained for 3 years and is open to inspection by persons authorised in writing as prescribed by the Act.⁶

No habit-forming drug acquired by a medical practitioner shall be used by him except for strictly medicinal purposes.⁷ It may not be used for the satisfaction or relief of a habit or craving except in certain approved institutions. It is also an offence for any person to keep in his possession or control any habit-forming drug⁸ or any poison⁹ without using all reasonable care in its custody or use. Every medical practitioner also 'shall label with the words "Poison" and "Vergif" every vessel, box, bottle, wrapper or package in his possession which contains any article which is a poison'.¹⁰ This requirement, however, does not apply to any medicine dispensed by a medical practitioner if it is labelled with his name and address and the relative particulars are entered in his prescription book¹ (see above).

There is a similar proviso conditionally exempting medicines dispensed by a medical practitioner from the requirement that medicines for external use containing a poison must be in a container distinguishable by touch (i.e. a 'poison bottle') and labelled 'For External Use Only—Alleen vir Uitwendige Gebruik'.¹ Apparently the Act contains no such exemption in respect of potentially harmful drugs¹¹; the omission of the exemption would appear to be an oversight.

Finally, amongst the obligations imposed on medical practitioners who dispense, is one introduced by regulations made by the Minister under section 42 of the Food, Drugs and Disinfectants Act, 1929. These regulations prescribe that every package containing any food or drug must be labelled with the name and business address of the . . . person by whom or on whose behalf it was enclosed in the package. 'Drug' is defined as any substance or mixture of substances used as a medicine, whether internally or externally, and it is therefore held that a medical practitioner who dispenses his own medicine must label all the containers with his name and address, irrespective of whether or no the medicine contains poisons or other scheduled drugs.

Passing to certain legal requirements which are the concern of all practising doctors, and not only those who dispense, we end with the following:

Every prescription ordering any habit-forming drug must state the name and quantity of such drug that may be sold or supplied, the name and address of the person to be supplied and of the practitioner signing (as well as the qualification of the latter), and the date of issue of the prescription; and not more than one issue of the drug may be made on the prescription.¹²

The same provisions apply to prescriptions ordering any potentially harmful drug (though not poisons as such),

vir moontlik gevaarlike medisyne ook melding moet maak van die aantal male en met welke tussenposes die resep opgemaak mag word, en (behalwe in die geval van medisyne vir uitwendige gebruik) die grootte van en hoe dikwels elke dosis geneem moet word. In 'n noodgeval kan moontlik nadelige medisyne egter aan enigeen verkoop of gelever word op regstreekse, mondelinge opdrag van 'n geneesheer aan 'n apteker aan wie die geneesheer persoonlik bekend is; in so 'n geval moet die geneesheer binne 24 uur 'n geskrewe voorskrif aan die apteker gee wat in alle opsigte aan die vereistes van die Wet voldoen.¹³

VERWYSINGS

na die Wet op Geneeshere, Tandartse en Aptekers No. 13 van 1928 (soos gewysig)

1. Artikels 55 en 56.
2. Sub-artikel 6 van artikel 65.
3. Sub-artikel 2 van artikel 65 bis.
4. Sub-artikel 6 van artikel 65.
5. Sub-artikel 7 van artikel 65.
6. Sub-artikel 8 van artikel 65.
7. Sub-artikel 2 van artikel 65.
8. Sub-artikel 2 van artikel 61.
9. Artikel 54.
10. Artikel 49.
11. Sub-artikel 1 (b) van artikel 65 bis.
12. Sub-artikel 5 van artikel 65.
13. Sub-artikels 1, 5 en 6 van artikels 65 bis.

with the difference that the prescription containing the potentially harmful drug is to state the number of times and the intervals at which the prescription may be dispensed, and (except for medicine for external use) the amount and frequency of each dose. Nevertheless, in emergencies any potentially harmful drug may be sold or supplied on the verbal instructions of a medical practitioner given direct to the chemist, if the practitioner is personally known to him; in which case the practitioner is obliged within 24 hours to furnish the chemist with a written prescription complying with the requirements of the Act.¹³

REFERENCES

(to the Medical, Dental and Pharmacy Act No. 13 of 1928 (as amended))

1. Sections 55 and 56.
2. Sub-section 6 of section 65.
3. Sub-section 2 of section 65 bis.
4. Sub-section 6 of section 65.
5. Sub-section 7 of section 65.
6. Sub-section 8 of section 65.
7. Sub-section 2 of section 65.
8. Sub-section 2 of section 61.
9. Section 54.
10. Section 49.
11. Sub-section 1 (b) of section 65 bis.
12. Sub-section 5 of section 65.
13. Sub-sections 1, 5 and 6 of section 65 bis.

THE SOUTH AFRICAN JOURNAL OF LABORATORY AND CLINICAL MEDICINE

Besides this weekly journal the Medical Association of South Africa publishes a quarterly journal, which is intended for articles of a more specialized character. The quarterly was founded in 1942 by the Cape Town Post-Graduate Medical Association under the name *Clinical Proceedings*. In 1950 it was taken over by the Medical Association of South Africa under the name *The South African Journal of Clinical Science*. It has now been decided to change the name to *The South African Journal of Laboratory and Clinical Medicine*. This has been done to bring the name into accord with the Association's policy of publishing articles in it dealing with branches of medicine other than the purely clinical.

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The journal will continue to be published 4 times a year and the subscription remains unaltered at £1 5s. (single copies 7s. 6d. each).

The office of *The South African Journal of Laboratory and Clinical Medicine* will continue to be at Medical House, 35 Wale Street (P.O. Box 643), Cape Town.

THE MANAGEMENT OF UPPER HAEMATEMESIS AND MELAENA *

LOUIS MIRVISH, M.A., M.B., CH.B. (CAPE TOWN), M.R.C.P. (LONDON)

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In the last few years a number of reports have appeared on the results of various forms of treatment for severe gastro-duodenal haemorrhage. Avery Jones¹ made a

* A paper submitted to the South African Medical Congress, Port Elizabeth, June 1954.

critical analysis of previously published reports, and pointed out the statistical fallacies which may be inherent in such reports and the particular value of individual series of cases. The greatest accuracy is necessary in the collection of data and in deciding on

the final diagnosis in every case. For the proper evaluation of various forms of treatment, it would also be desirable that the patients in the different series should be strictly comparable in every respect. As the conditions in different parts of the world vary widely, such comparable conditions rarely exist. In South Africa there is the added complexity of dealing with patients drawn from a multi-racial society, differing widely in levels of culture, in customs and dietary habits.

This report deals with an individual series of cases. It includes all cases of haematemesis and melaena admitted to my wards at the Groote Schuur Hospital during the last 4½ years (1950 to mid-1954). The wards contain 17 European and 17 non-European beds, the latter receiving Cape Coloured, Malays, and a few Natives (Bantu Africans). It is the routine in our hospital that all cases of haematemesis and melaena are admitted to the medical wards, and if it becomes necessary they are then transferred to the wards of the opposite surgical firm. The great majority of the cases here reported were first admitted to our medical wards, but there were 12 cases which, for one reason or another, were admitted direct to the surgical side. The latter were all cases of bleeding peptic ulcer, and they have been included in this series. Patients who started bleeding after entering hospital have also been included.

A certain regimen of management of cases of haemorrhage was initiated 4½ years ago and this was applied with minor modifications to all our cases during that period. The scheme was carried out with the closest co-operation of the staff of our opposite surgical firm, and any decision about operation was arrived at after consultation between our staffs.

This series comprises 108 cases of severe gastrointestinal haemorrhage and 21 cases of mild bleeding. If repeated admissions for haemorrhage of the same patient are included the total number of episodes of haemorrhage is 142.

SCHEME OF MANAGEMENT

Every case of haematemesis and melaena presents urgent problems of diagnosis and treatment and it is therefore essential to have ready a plan of action, a pre-arranged scheme of management. In our wards it is a rule that every such case must be seen immediately by the senior house physician and one of the consultants; in many cases the surgical consultant is also asked to watch the case from the beginning. A history is obtained as fully as possible from the patient and if necessary from his relatives; particularly an attempt is made to assess the amount of blood lost. A sample of blood is withdrawn immediately for blood grouping and cross-matching; a blood count—of which the most important part is a packed-cell volume estimation—is done, a blood urea, and in many cases liver function tests. The patient is put on to a half-hourly pulse and blood-pressure chart. He is kept very quiet for the first few days, not being allowed to sit up for feeds or for micturition and defaecation.

Sedation. The patient is given initially by injection ½ gr. of morphia or one ampoule of omnopon or 3 gr.

of sodium phenobarbitone (the last by deep intramuscular injection). The disadvantage of morphia is that it may cause vomiting. Sedation is maintained by ½ or 1 gr. of phenobarbitone every 6-8 hours for the first few days. The purpose of sedation is to allay anxiety, reduce activity and avoid mental stimulation, which is harmful because it may lead to increased gastric secretion, motility and hyperaemia.

Feeding and Alkalies. It is not necessary or desirable to start feeding the patient the moment he enters the hospital. He may still be nauseous or averse to taking food, and in any case the stomach often contains a fair amount of protein food—blood. On the other hand, thirst must be avoided and the patient is allowed sips of water or milk as desired.

An analysis of the blood-urea estimations done as a routine in all the patients revealed very few cases where the values were above normal. It appears that the chief cause for a raised blood urea in haemorrhage is dehydration; this was prevented in our cases by allowing the intake of fluids from the beginning, and by the early and liberal administration of blood.

About 12 hours after the haemorrhage, food is given. There does not seem to be any reason why a patient with a gastric or duodenal ulcer who normally would be allowed a light diet should be offered heavier foods after he has had a haemorrhage. The value of the Meulengracht² regimen is that it avoids dehydration and starvation, and this can be attained by giving light foods. In the average case feeding is commenced with 4 oz. of milk every 2 hours. A dose of insoluble alkali is given every hour. This regimen is carried out for one day as a rule and the patient is then put on to the usual light ulcer-diet with 2-hourly feeds, hourly alkalies and sedatives.

Blood Transfusion. Our most important weapon in the treatment of haemorrhage is the administration of blood. If the patient has lost blood, the blood must be replaced. It was the custom in the past to formulate conditions which necessitated blood transfusion, such as haemoglobin values under 50% or 40%, rapid pulse rate (over 100), low blood-pressure, etc. Experience with this emergency has shown that these criteria were inadequate. Blood transfusion should not be reserved for use as a last resort but should be given in order to render the patient as normal as possible in as short a time as possible. The ideal would be to restore the blood as rapidly as it is lost from the ruptured vessels.

Loss of blood for any length of time leads to many complications. Apart from shock, it may lead to tissue anoxia and it may cause coronary insufficiency, mental confusion and cerebral vascular accidents, renal impairment or pulmonary complications. In addition there are the metabolic effects of loss of the proteins and other constituents of blood. It is not often that a patient dies as the direct result of catastrophic exsanguination; more commonly death occurs some days after a haemorrhage from one of the complications of long-continued shock. The purpose of blood administration is not only to overcome anaemia and shock, but to restore the patient to a state which would enable him to withstand further blood-loss should bleeding con-

tinue or recur, and to withstand operation should it become necessary.

In giving blood the aim should be two-fold: (1) rapid restoration of blood, and (2) complete restoration of the blood lost.

Rapid Restoration of Blood. If blood is to be given, there should be no waste of time; the old wait-and-see policy may lead to disaster. The practical side of immediate blood-transfusion is a matter of organization. In our series, in many cases we succeed in starting blood transfusion within an hour of the patient's admission to hospital; often it was much less than an hour.

Blood is usually run in at the rate of 1 pint in 4 hours, but the first 1 or 2 pints are often transfused at a much faster rate. In certain cases of severe blood loss, blood may have to be administered very rapidly—if necessary into both arms under pressure.

Complete Restoration of Blood. The ideal should be complete blood restoration in every case of haemorrhage. There are, however, certain practical difficulties; the first is to determine how much blood the patient requires. Blood counts may not reflect the true state of affairs, because it takes a considerable time (1-2 days) before complete haemodilution has occurred. The blood count will show false high values if done soon after the haemorrhage. It would be ideal if we had a ready method of blood-volume estimation and could calculate and determine the actual amount of blood lost. In a recent publication from Christchurch, New Zealand³ the authors have used the Evans blue method for determining the plasma volume, and could thus calculate the amount of blood lost. By using this method they could also determine whether a patient had stopped bleeding, or was still losing blood. These authors have also resorted to complete blood replacement with excellent over-all results.

Should there emerge, as appears likely, an easy and accurate technique for blood-volume estimation (e.g. by the use of radio-active phosphorus) then the question of how much blood has been lost, and hence how much should be given, will be settled in a quantitative way and there will be no necessity to guess. Not having a method readily available for the estimation of blood volume, we have had to rely on certain indirect information. The following factors have to be taken into account.

1. The blood count (P.C.V.) and its relation to the time of the haemorrhage.
2. An estimate of the amount of blood in the vomit and stools.
3. A history of loss of consciousness.
4. The degree of shock.
5. The pulse rate and drop in blood pressure.

Using the above information one can, with experience, obtain a fair estimate of the state of affairs and judge the amount of blood which should be given. Repeated blood-counts during the course of transfusion give an increasingly accurate picture as time goes on and more haemodilution takes place. It is not necessary to delay the commencement of transfusion, as the final amount of blood required can be assessed while the blood is being administered.

The dangers of blood transfusions are: (1) transfusion reactions, (2) the risk of inducing Rh antibodies in certain individuals, (3) the risk of transmitting viral

hepatitis, and (4) the possibility of inducing cardiac failure by excessive administration of fluid (blood). The risk of administering unsuitable blood can mostly be avoided by exercising great care in the blood transfusion service by cross-matching and Rh testing when necessary; the danger of overloading the circulation is avoided by carefully watching for signs of cardiac embarrassment (increase of venous jugular pressure, etc.).

In our series of 82 peptic ulcer cases, we gave blood to 64 in amounts ranging from 2 to 12 pints each, an average of 4½ pints. Nowadays we never give less than 2 pints initially; in a case of moderate severity (say where 1 pint of blood has been vomited) we give about 3 pints; in a more severe case 5-6 pints and upwards. We go on giving blood until the haemoglobin is returned to 100%.

Our average of 4½ pints can be compared with an average of 7.9 pints in the series of the New Zealand group of workers quoted above.³ Although the two series are not comparable, yet it would appear that the amounts of blood we gave were still far short of what was required.

The following 2 cases illustrate the importance of early and adequate blood transfusion:

Case 1. A man of 32 with a history of duodenal ulcer for 11 years and a severe haematemesis 10 years previously had a haematemesis of about 1 pint of blood 18 hours before admission. When he came into hospital he was not shocked and appeared comfortable; pulse 76, blood pressure 110/80 mm. Hg.; P.C.V. 37%. He was not given blood. 36 hours after admission he again vomited about a pint of blood. He was immediately transfused and he required 6 pints of blood before his P.C.V. rose to 41%. He recovered on conservative treatment.

Comment. In this case, the patient's general good condition on admission lulled us into a feeling of safety and no blood was given in the first instance. Yet the second haemorrhage, 36 hours later, might have led to disaster. It has been our experience that when 1 pint of blood is lost by vomiting, then probably another 2 pints pass down the intestine; such a patient usually requires 3 pints of blood for his blood level to be restored to normal.

When we consider that the blood volume of an adult of average weight is about 11 pints, then the sudden loss of 3 pints—representing about 30% of his blood volume—can deal a serious blow to the body economy.

Case 2. A European motor mechanic, aged 52, was admitted 2 hours after having vomited 4 cupfuls of bright-red blood with clots. He did not faint. He had a vague history of long-standing indigestion; he took alcohol regularly and had taken a considerable amount in that week (Christmas-New Year).

On admission he did not appear to be shocked—pulse 100, blood pressure 120/70, general condition good; P.C.V. 32%, haemoglobin 70%. Examination otherwise negative.

He was put on to blood transfusion immediately and received 3 pints within 12 hours, at which time his pulse was 90, blood pressure 120/80, haemoglobin 95%. The following day he appeared well; 30 hours after admission his pulse was 80, blood pressure 140/100, haemoglobin 95%.

He passed a melaena stool 46 hours after admission, but there was no change in his general condition. Twelve hours later, 58 hours after admission, he passed another melaena stool. He was not feeling well; pulse 100, blood pressure 90/70, haemoglobin 95%. Blood transfusion was started immediately and he was transferred to the surgical firm and operated on. There was a large indurated duodenal ulcer on the posterior surface, adherent to the pancreas and almost encircling the duodenum at this part. Partial gastrectomy was performed with considerable difficulty. The patient made an uneventful recovery.

Comment: This patient was operated on 60 hours after the first haemorrhage. The large size and marked induration of the ulcer would have led, almost certainly to a recurrence of bleeding.

Had he not received full blood replacement in the first instance, he may not have survived the last severe haemorrhage or might not have withstood so severe an operation. This patient would have done better on immediate operation, but then the diagnosis was much in doubt.

Surgical Intervention

The decision to operate depends on a number of factors.

1. *Severe and Recurrent Haemorrhage.* Cases in which the haemorrhage does not cease or recurs within 48 hours have to be operated on. In some cases the period can be extended to 72 hours, but after this period operation carries many risks.

Cases where the diagnosis of chronic gastric or duodenal ulcer has been established (from the previous history or X-ray examination) form the bulk of those who come to operation. But we have not found it advisable, as certain authorities recommend, to limit operation to this category only. There are many patients in whom the history obtained is vague and not at all typical of peptic ulcer, and who yet prove later to have a chronic peptic ulcer. The exclusion of cases of portal hypertension is usually not difficult, because those cases who present with severe haemorrhage have an unmistakable history and characteristic physical findings.

In our series we have encountered a relatively large number of cases of massive bleeding from acute gastric ulcer where the history is very short and the character of indigestion of a rather vague pattern. Many of these were severe enough to necessitate operative interference. To have withheld operation in such cases because there was no evidence of a chronic peptic ulcer might have been disastrous.

There were certain cases where the haemorrhage was proved to arise from carcinoma of the stomach, sarcoma of the small intestine, and pancreatitis. In these cases there was no evidence to suggest that the underlying cause was peptic ulcer, acute or chronic; the decision to operate was made entirely on the fact that there was severe and recurrent haemorrhage.

2. *The Age Factor.* The age of the patient is an important factor in the decision to operate; patients who are over 45 are candidates for operation. Although this is a good general rule, we could not adhere to it strictly and there were many exceptions.

Contra-indications to Surgery

1. Patients suffering from the effects of long-continued bleeding are bad surgical risks. Sometimes a patient is admitted to hospital many days after a severe haemorrhage; often the admission has become urgent because of a recurrence of bleeding; or a patient's loss of blood has been treated by hesitant and inadequate blood transfusion. Such patients present as desperate cases and the temptation is to offer immediate operation, but the results are very bad and it is advisable to persist with blood transfusions and general restorative measures.

2. The other type of case is where serious general disease is present, such as cardiac infraction and heart failure, cirrhosis of the liver and cholaemia, and uraemia. In these cases any operative procedure is generally contra-indicated.

The general indications for operation remain: severe or recurrent haemorrhage, seen within 48-72 hours after bleeding has commenced, of the older age group, and not associated with serious general disease.

DISTRIBUTION OF CASES IN THE SERIES

The causes of haemorrhage are listed in Table I.

Diagnosis. A positive diagnosis was made by X-ray examination, or the findings at operation or post mortem; all specimens were examined histologically. X-ray examination was usually carried out 10-14 days after

TABLE I. CASES OF MASSIVE HAEMORRHAGE, CLASSIFIED ACCORDING TO FINAL DIAGNOSIS

	Cases	Deaths
<i>Peptic Ulcer Group</i>		
Chronic gastric ulcer, diagnosed by X-ray, operation or P.M.	23	3
Chronic pyloric ulcer, diagnosed by X-ray, operation or P.M.	2	0
Chronic duodenal ulcer, diagnosed by X-ray, operation or P.M.	25	1
Previous operation for duodenal ulcer (G.E. or P.G.)	4	0
Acute gastric ulcer: diagnosed at operation or P.M.	6	1
Chronic peptic ulcer history, X-ray negative	11	0
Chronic peptic ulcer history, X-rays not done	1	0
Short history indigestion, no lesion discovered	4	1
No previous indigestion, X-rays negative	1	0
No previous indigestion, no lesion at P.M.	1	1
Following ingestion of aspirin	1	0
Hiatus hernia	3	0
	82	7
	=	=
<i>Miscellaneous Group</i>		
Carcinoma of stomach	5	1
Recticulum-celled sarcoma of small intestine	1	0
Chronic pancreatitis	1	0
Undiagnosed—not suggestive of peptic ulcer	4	0
	11	1
	=	=
<i>Portal Hypertension</i>		
Banti's syndrome	5	0
Cirrhosis of liver, alcoholic	8	6
Cirrhosis of liver, not alcoholic	2	1
	15	7
	=	=
Totals	108	15
	=	=

the haemorrhage. In some few cases, however, a barium meal was done, with special precautions, only 3-5 days after the bleeding. Gastroscopy was not generally available and was only carried out in a few cases.

A diagnosis of chronic gastric ulcer was made on radiological grounds when a characteristic ulcer-crater was demonstrated. The diagnosis of acute gastric ulcer was never made or admitted on radiological grounds. The radiological evidence of duodenal ulcer was based upon the demonstration of an ulcer-niche or a typical duodenal deformity. All the X-ray films of every case in the series were inspected by the author.

The diagnosis of portal hypertension was made on the clinical findings, liver biopsy, radiological demonstration of oesophageal varices, or the results at



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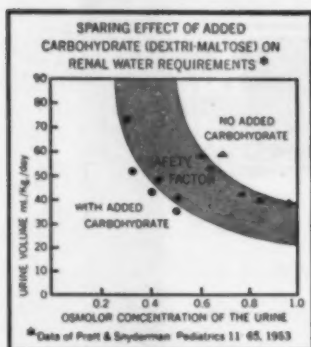
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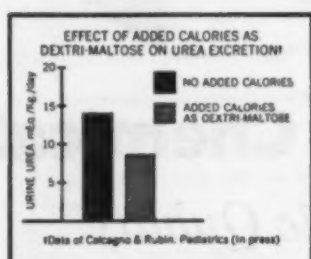
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autopsy. The diagnoses of carcinoma of the stomach, chronic pancreatitis and sarcoma of small intestine were made at operation or autopsy.

The Main Causes of Haemorrhage. The 108 patients who had massive haemorrhage were grouped as follows:

	Cases
'Peptic ulcer' group	82
Portal hypertension	15
Miscellaneous causes	11
	<hr/> 108

'PEPTIC ULCER' GROUP

The distribution according to age is set out in Table II (in which the 'portal hypertension' group is also included):

TABLE II. AGE DISTRIBUTION

	10-19	20-29	30-39	40-49	50-59	60-69	70+	Total
Chronic gastric ulcer		5	1	6	7	2	2	23
Pyloric ulcer					1	1		2
Chronic duodenal ulcer	1	5	5	7	4	3	—	25
G.E. and P.G.		1	2	1				4
Acute gastric ulcer					4	1	1	6
Chronic peptic ulcer	1	4		1	3	2	1	12
Acute lesions		1	1	1	2		2	7
Hiatus hernia				1		1	1	3
Total 'peptic ulcer' group								<hr/> 82
Banti's syndrome	1	2	1		1			5
Cirrhosis-alcoholic			1	5	1	1		8
Cirrhosis—not alcoholic				1	1			2
Total portal hypertension group								<hr/> 15

The incidence of chronic gastric and duodenal ulcers and the sex distribution were as follows:

	Male	Female	Total
Chronic gastric ulcers and pyloric ulcers	20	5	25
Duodenal ulcers	20	5	25

The race distribution in the whole 'peptic ulcer' group is 61 Europeans and 21 Coloured, a proportion of 3 to 1.

The chronic ulcers were distributed as follows:

	European	Coloured	Total
Chronic gastric ulcers and pyloric ulcers	14	11	25
Chronic duodenal ulcers	20	5	25

Chronic Gastric Ulcers and Pyloric Ulcers: Treatment and Results

There were 23 cases of chronic gastric ulcer and 2 cases of pyloric canal ulcer. In only 3 of these was no blood given; the other 22 received blood, from 2 to 12 pints, an average of 4.1 pints each.

Of the 25 cases, 8 underwent the operation of partial gastrectomy within 3 days of admission. There were 2 deaths among these 8 patients.

One patient died while on conservative treatment; he was a heavy drinker and at post mortem was found to have a bleeding chronic gastric ulcer and also advanced cirrhosis of the liver.

In 4 patients there was a history of chronic alcoholism and the episode of haemorrhage followed on a bout of drinking.

Duodenal Ulcers: Treatment and Results

There were 25 cases of duodenal ulcer. Four patients did not receive blood, the other 21 received from 2 to 10 pints of blood, average 4.2 pints.

Nine patients underwent the emergency operation of partial gastrectomy for bleeding.

Of the 25 cases one was in the category of mild haemorrhage (and is included in Table III as well).

In one case the ingestion of aspirin may have been a cause in the production of haemorrhage.

In one patient severe haemorrhage developed while on anti-coagulant therapy.

There was only one case of alcoholism in the series, and the episode of bleeding did not seem to be related to alcoholic indulgence.

In one case the ulcer was situated in the second part of the duodenum. In one case there was a large duodenal diverticulum present as well.

There was one death in the whole group and it followed an emergency operation.

Previous Partial Gastrectomy or Gastro-enterostomy for ulcer

There were 4 cases of haemorrhage in patients who had been operated on previously for peptic ulcer. They all recovered on medical treatment. They were as follows:

Case 3. European male of 26, had a haemorrhage 10 weeks after operation for chronic gastric ulcer and duodenal ulcer. X-ray examination was negative.

Case 4. A Coloured woman, aged 37, had a haemorrhage 2 months after an emergency partial gastrectomy performed for a severe haemorrhage from a duodenal ulcer. Gastroscopy demonstrated a stomal ulcer.

Case 5. European male, 27 years, had a small haematemesis 2½ years after a partial gastrectomy for haematemesis; at that operation an acute gastric ulcer had been found.

Case 6. European male, aged 46, had had a gastro-enterostomy 20 years previously. He was admitted with a severe haematemesis requiring the administration of 6½ pints of blood. The haemorrhage followed an influenza-like illness; there had been no previous indigestion for many years. X-rays were negative.

Chronic Peptic Ulcers with Negative Radiological Findings. There were 11 cases where X-ray examinations were normal and 1 case where X-rays were not done. The diagnosis of chronic peptic ulcer was made because of a characteristic history, dating back for from 1½ to 25 years. Some had had previous positive X-ray findings, or previous episodes of bleeding. Seven patients received from 2 to 12 pints of blood, average 5 pints. No immediate operation was done on any of these cases and there were no deaths.

Radiological Demonstration of Ulcer Lesions after a Haemorrhage. Routine barium meal investigations were carried out, mostly 10-14 days after the haemorrhage. Positive radiological evidence of chronic gastric and duodenal ulcers, in about equal numbers, was obtained in 40% of the cases examined. This figure of positive radiological findings is higher than that generally recorded.

Acute Gastric Ulcers

In our series, the incidence of severe bleeding caused by acute gastric ulcers was relatively high. There were 6 such cases in whom the lesion was discovered at operation or post mortem. One patient died while on conservative medical treatment; 5 patients underwent operation and all 5 recovered. Alcohol did not seem to play a role in any of them. These cases present difficult and interesting problems, and merit further study. The following are brief case histories of the 6 cases and of a 7th following aspirin:

Case 7. European female, 52, vomited about 1 pint of blood and had considerable melaena 36 hours before admission. Six years before she had had a severe haematemesis; melaena 5 times during the last 6 years. On admission pulse was 84, blood pressure 96/50, P.C.V. 23%. She was given 4 pints of blood immediately and was operated on on the 3rd day. No chronic ulcers were found but 'multiple minute mucosal ulcers of the stomach'.

Case 8. European male, aged 61, was admitted 3 hours after a haematemesis of 2½ pints. On admission pulse was 96, blood pressure 190/115, P.C.V. 37%. He had an ulcer story for 5 years and was a known hypertensive. Eleven hours after admission he had another melaena, pulse was 110, blood pressure 150/80, P.C.V. 30%. He was given 6 pints of blood (packed cells). He died 2 days after admission. Post mortem showed 'an acute gastric ulcer in the cardia, with an eroded vessel in the base'. There was also a healed chronic gastric ulcer and a healed duodenal ulcer. Atheroma was marked and there was a right coronary thrombus leading to infarction, presumably a terminal event as the result of the drop in blood pressure. There were granular kidneys. He was considered too ill for operation. Some hours before death his P.C.V. was 45%.

Case 9. European female, aged 55, was admitted 36 hours after having vomited 'about 4 pints of blood'. She had had 2 episodes of haematemesis 25 years and 8 years previously and for 3 weeks before admission had suffered from vague dyspepsia. On admission pulse was 120, blood pressure 160/80, P.C.V. 24%, R.B.C. 2.6 million. She was given immediately 4 pints of blood in the first 10 hours. Ten hours after admission and again 16 and 17 hours later she had further haematemeses of about 1 pint each time. From the 10th hour until the 27th hour after admission she was given 4 pints of blood again. She was operated on 29 hours after admission and an acute bleeding gastric ulcer was found, also the scars of chronic gastric ulcers. Partial gastrectomy was performed and she made an uneventful recovery.

Case 10. European male, aged 73, a diabetic and hypertensive patient, had a history of indigestion, not characteristic of ulcer, dating back about 50 years. He was admitted 8 hours after having vomited about 2 pints of blood; pulse 80, blood pressure 180/115, general condition satisfactory. He vomited again 3 and 5 hours after admission, each time about a pint of fresh blood. He was given 4 pints of blood and operated on 8 hours after admission; a large acute erosion of the stomach was found, with a small eroded vessel in the floor, and there was another smaller acute erosion. Partial gastrectomy was performed and the patient recovered satisfactorily.

Case 11. Coloured female, aged 58, had a history of 6 months' epigastric pain, suggestive of peptic ulcer. She had haematemesis and melaena 6 hours and 4 hours before admission, losing consciousness on each occasion. On admission she was shocked and still passing bright-red blood per rectum; pulse 80, blood pressure 110/80, P.C.V. 35%. She had another brisk haematemesis 3 hours after admission. Owing to some difficulty she was started on blood transfusion only 6 hours after admission and received 4 pints. She was operated on 8 hours after admission, i.e. 14 hours after the first bleed. At operation nothing abnormal was found even after opening the stomach and examining it carefully. Nevertheless partial gastrectomy was performed. The pathological report was 'two acute mucosal ulcers, through the mucous membrane but not involving the deep muscle layers, were found: in the floor of one is a necrotic vessel'.

Case 12. A Coloured man, aged 51, was admitted from a prison where, for 15 months, he had been serving a sentence for

theft. Previous history: asthma and bronchitis for 13 years; 2 years ago, while in hospital for fractured ribs following a car accident, he had a severe melaena; no previous history of abdominal discomfort or indigestion.

For the past 5 days he had vomited about a pint of blood every day and had some melaena. On admission he was extremely ill, very shocked, dehydrated, pulse not palpable, blood pressure unrecordable, heart rate 150. He had a barrel-shaped chest with marked emphysema and rhonchi present; liver enlarged 2 finger-breadths. Blood: haemoglobin 10.3 g.%, P.C.V. 33%, blood urea 74 mg.%, liver function tests normal.

He was given blood transfusion continuously. He had 4 more melaena stools and vomited coffee-ground material. His extremely bad general condition precluded operation at that stage. The rate of transfusion was speeded up and at the end of 27 hours his condition had improved sufficiently to warrant the risk of operation. By that time he had received no less than 15 pints of blood.

At operation (27 hours after admission) no abnormality was found at first, the stomach and intestines appeared normal. On opening the stomach a longitudinal superficial gastric ulcer was seen in the antral region, and blood was seen to spurt from a vessel in its base. Partial gastrectomy was performed. The histological appearance of the resected specimen showed no abnormality. The patient recovered after a stormy convalescence and was discharged on the 14th day.

Case 13. Haemorrhage following aspirin. A European male, aged 51, with no history of previous indigestion, developed symptoms of 'flu'. On the 4th day he was feverish and had a rigor, and at night took 3 tablets containing aspirin. The following morning he had a small tarry stool. In the afternoon he had a temperature of 101° F.; he vomited up 2 tablespoons of blood. The following morning he awoke feeling very nauseous and vomited some 2 pints of blood and felt very dizzy and weak. He was sent immediately to hospital.

In hospital he ran a temperature of 102° for 4 days and it was presumed that he had some unidentified infection. His P.C.V. on admission was 27%. He was given 3 pints of blood immediately and he made an uneventful recovery. X-ray examination carried out 11 days later was negative.

Comment. In the above case the balance of clinical evidence is in favour of a diagnosis of aspirin-induced haemorrhage. It is always difficult, however, to differentiate between haemorrhage from this cause and haemorrhage from acute ulcer.

PORTAL HYPERTENSION

Cirrhosis of the Liver

There were 10 cases of cirrhosis, 8 alcoholic and 2 of uncertain etiology.

The 8 cases of alcoholic cirrhosis occurred in 7 males and 1 female, all Europeans, the ages varying from 37 to 63 years, with 5 cases in the age group 40 to 50. In 7 of these cases the haemorrhage for which the patient was admitted was severe, in one it was moderate; the 7 cases of severe haemorrhage all received blood. Of the 8 patients, 6 died, all males. Death occurred in all cases within 5 days of the haemorrhage.

Of the 2 cases of cirrhosis of undetermined etiology one recovered and one died 24 hours after the haemorrhage.

An attempt was made to determine the cause of death in the 7 fatal cases. In 3 the haemorrhage had ceased and the blood lost was rapidly made up by transfusions; the cause of death appeared to be cholaemia. All these patients had marked and long-standing cirrhosis of the liver and it would appear that the occurrence of a massive haemorrhage precipitated the patients into fatal cholaemia. In 3 other cases the loss of blood may have been the cause of death, although even here the final picture resembled more that of cho-

laemia than exsanguination. One patient was admitted in cholaemia and the haemorrhage did not seem to make a significant difference to the outcome.

Banti's Syndrome

There were 5 cases of Banti's Syndrome: 4 were Coloured patients in the younger age group (aged 11, 23, 29, 33), 3 males and 1 female; 1 was a European male of 56.

One patient was admitted once only, but 4 were admitted more than once for haemorrhage: 2 twice, 1 4 times, and 1 7 times.

In the 4 patients with multiple admissions, the haemorrhage was fairly severe in most admissions, requiring in one case (the one with the 7 admissions) the transfusion of 14 pints of blood in 12 hours on one occasion and 11 pints in 10 hours on another occasion; in addition various operations had to be performed in some cases. In spite of many violent alarms, none of the patients in this small series died.

MILD HAEMORRHAGE

There were 21 patients who had very mild haemorrhage. They are included here in a separate category because this report deals with all cases which were admitted to hospital on account of the complaint of upper gastrointestinal haemorrhage. At the time of admission such cases may present very considerable difficulties, although the problem is one of diagnosis rather than treatment. Vomiting blood, even in small amounts, is always an alarming symptom and brings the patient to the doctor. Furthermore the amount of blood lost may sometimes be much exaggerated.

In Table III is set out a list of the presumed causes of mild haemorrhage. In many cases the cause of the bleeding could not be determined with certainty; in some there was an underlying disease, such as congestive cardiac failure, sub-acute bacterial endocarditis, or leukaemia. In some there was a history of indigestion, suggesting the possibility of a chronic or acute peptic ulcer. In 3 cases the vomiting of blood followed an acute bout of alcoholic indulgence.

TABLE III. CASES OF MILD HAEMORRHAGE

	Cases
Acute alcoholic gastritis	3
Acute gastro-enteritis with marked vomiting	1
Febricula (and ? aspirin)	1
Indigestion, long duration	2
Indigestion, short duration	2
Duodenal ulcer	1
Carcinoma of stomach	1
Congestive cardiac failure	2
Subacute bacterial endocarditis	1
Acute myeloid leukaemia	1
Miscellaneous, undiagnosed	6
Total	21

CONCLUSIONS

The 'Peptic Ulcer' Group

Incidence and Distribution. The incidence of chronic gastric ulcer was relatively high in proportion to cases

of duodenal ulcer. According to Crohn and Janowitz,⁴ 'haemorrhage from duodenal ulcer occurs approximately 4 times more frequently than in gastric ulcer cases, but since that is also the relative incidence of duodenal to gastric ulcer, it is apparent that both types of ulcer have an equal tendency to haemorrhage'. In our series they occurred in almost equal numbers. This may partly be explained by the fact that while we found no significant difference between the European and non-European incidence of gastric ulcer (14 European and 11 Coloured), there was a markedly reduced incidence of duodenal ulcer in the non-European (20 European and 5 Coloured).

The race distribution in the whole peptic-ulcer group was 61 European and 21 Coloured, a proportion of 3 to 1. There was not a single African (Bantu) patient in the whole series. This bears out the clinical impression that while peptic ulcer is extremely rare in the African (Bantu) it occurs in the Cape Coloured, but not as frequently as in the European.

The sex distribution showed a great preponderance of males—40 male and 10 female cases of haemorrhage in the chronic-ulcer series.

The age distribution showed that the gastric-ulcer cases generally occurred in an older age-group than the duodenal ulcers.

A rather remarkable finding was the high proportion of cases of acute gastric ulcer leading to very severe haemorrhage. Apart from the 6 proved cases reported above, there were 2 fatal cases in whom no lesion was discovered at post mortem (? 'gastrostaxis'), and 4 other cases with a short history of indigestion or no history of indigestion who were probably cases of acute ulcer. There were thus probably no less than 12 cases of massive haemorrhage (with 3 deaths) in whom the cause was acute gastric ulcer, compared to 23 cases in which the cause was chronic gastric ulcer (with 3 deaths). This subject requires further investigation and study.

Results of Treatment. There were 82 cases of severe haemorrhage in the peptic-ulcer group and, of these, 24 underwent the operation of partial gastrectomy—nearly 30%.

Of the 58 patients treated conservatively, 3 died.

Of the 24 patients treated surgically, 4 died.

The total mortality for the peptic-ulcer group with severe haemorrhage was 7 out of 82—9%.

Many of the patients who were treated medically underwent the operation of partial gastrectomy some weeks or months later.

Portal Hypertension

The incidence of portal hypertension in our series is very high when compared with statistics published in other countries. In Avery Jones's series,¹ among 687 cases of haemorrhage there were 25 cases of portal hypertension (4%), while we encountered 15 such cases among 108 patients (14%).

The Role of Alcohol

Alcohol appeared to play an important role in the occurrence of haemorrhage in this series of cases. There were 8 cases of alcoholic cirrhosis, 7 males and 1 female, all Europeans. In 7 of the 8 patients hae-

morrhage (from dilated veins) was severe and 6 of the patients died.

Alcoholic cirrhosis was about 5 times as common as in the English series quoted above.¹

The fact that alcoholic cirrhosis was found exclusively in the European group, while the Cape Coloured patients did not present a single case, was rather surprising. Brock⁵ drew attention to the fact that 'registered' deaths from cirrhosis of the liver at the Cape are more common amongst Europeans than the Cape Coloured; Hansen⁶ in a study of the hospital and autopsy records of the Groote Schuur Hospital came to the same conclusion. This present series is very small, but it appears to confirm this finding. It is difficult to explain this disproportion, especially when it is considered that malnutrition and alcoholism are common among the Cape Coloured, and that the cirrhosis rate among the Bantu Africans is high. A possible explanation is that the European who indulges in alcohol generally drinks spirits, usually brandy, while the Coloured man drinks Cape wine. The European is usually a steady drinker, while the Cape Coloured is often a week-end drinker only.

Alcohol also seemed to be the immediate cause of provoking a haemorrhage in 4 cases of gastric ulcer, 1 case of duodenal ulcer and 3 cases in the mild-

haemorrhage group. Taken together with the cases of alcoholic cirrhosis, there were 16 cases, with 18 admissions, in a total of 142 episodes of bleeding; thus in 13% of cases of haemorrhage, alcohol played an important role in causation.

Prevention of Haemorrhage

Severe gastro-intestinal haemorrhage is always a most serious emergency. Close, constant attention and great resources are necessary for its adequate management. This grave complication might be avoided by early recognition and treatment of peptic-ulcer cases and a full appreciation of the other factors which lead to severe haemorrhage.

I am indebted to the members of my staff at the Groote Schuur Hospital for their valuable co-operation; also to Mr. G. Sacks, members of his surgical firm, and Mr. T. Schrire. I appreciate help given by Dr. R. Tobias, Dr. J. Gant and Dr. D. Krikler.

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'SWIMMER'S ITCH' IN SOUTH AFRICA

BOTHA DE MEILLON

and

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'Swimmer's itch', 'cercarial dermatitis', 'schistosome itch' and 'water rash' are all names for a rash produced in human beings by the cercariae of non-human schistosomes. It is true that under certain circumstances the cercariae of the human parasites may also produce a dermatitis as a result of skin penetration but this is not included under 'swimmer's itch' and is probably best referred to as 'bilharzial rash' or 'itch'.

'Swimmer's itch', though well known from the United States, Canada, Europe, Asia, Australia and New Zealand, has not been recorded from Africa (Cort 1950). We feel sure that once attention has been drawn to its occurrence here it will be found to be fairly common.

The present communication deals with one case in which a tentative diagnosis of 'swimmer's itch' was made, and the production of classical lesions in 3 volunteers with non-human cercariae from the locality near Johannesburg where the patient bathed.

The Presumed Case of 'Swimmer's Itch'

Through Dr. E. D. Arkell of Swaziland there was referred to us a small boy (I.T.) aged 10 years who, after

bathing in a swampy pool at Van Wyksrust, about 15 miles south of Johannesburg, developed a severe rash. He had swum in the same pool a week previously and had not noticed any skin irritation.

The rash and intense itching persisted for about 3 days, when it subsided. According to the father of the boy the patient showed no other symptoms nor did he, at any time, complain of any systemic or other disturbances.

The area where the infection occurred is known to be free of human bilharziasis and our surveys have shown that none of the accepted vectors of *S. haematobium* or *S. mansoni* occurred there.

Experimental

Several visits were made to the swampy pool in which the patient had swum. On each occasion hundreds of *Limnaea natalensis* and *Bulinus tropicus* were collected. They were found to be shedding at least 6 different types of cercariae. Amongst them were 4 species of fork-tailed cercariae and with these we performed some experiments in mice and monkeys. None of them produced a dermatitis when applied to the skin of monkeys. These experiments have not been concluded and it is hoped

will be reported later when certain other data from the human volunteers become available.

One of the 4 fork-tailed cercariae bore such a marked resemblance, both morphologically and in its swimming and resting behaviour, to the eye-spotted larvae of *Trichobilharzia ocellata* that it was decided to use this for experiments with human volunteers. The cercariae of this trematode are well known to produce 'swimmer's itch' in other parts of the world (Cort 1950).

Production of 'Swimmer's Itch' in 3 Volunteers

1. Twenty minutes after application of the cercariae in drops of water to the arm of the first volunteer itching began. Five hours later small red spots appeared presumably at the site of penetration by the cercariae. During the course of the next week the itching remained intense, sufficient to keep the volunteer awake at night, and the red spots increased in size, became raised, maculo-papular, vesicular and finally pustular. Fig. 1 is a photograph showing the condition 4 days after exposure to penetration by the cercariae. When the itching



Fig. 1. Photograph of 'swimmer's itch' 4 days after laboratory infection in the first volunteer.

was at its worst a 5% benadryl ointment was applied several times. The erythema disappeared almost immediately but returned within about $\frac{1}{2}$ hour. The itching was not relieved. Ten days after exposure the itching and redness had disappeared but up to date, that is one month later, small, slightly discoloured spots are still evident.

2. In the second volunteer the cercariae were firstly applied in drops of water as in the case of volunteer 1. There was no reaction whatsoever. The next day cercariae were again applied by inverting a tube containing them over the arm. Fifteen minutes later itching

commenced and after about 1 hour small red spots were seen in the area which had been covered by the mouth of the tube. By the next day the itching had gone while red spots remained unchanged. The latter never developed any further and gradually faded away during the course of a week.

3. In the third volunteer cercariae were pipetted over the arm in droplets. About $1\frac{1}{2}$ hours later itching commenced and faint red spots appeared over the area exposed. Three hours later the itching had gone and never again appeared. The red spots, however, became raised and enlarged, though not to the same degree as in volunteer 1. The papules, after persisting for a week, in one night enlarged into raised, nearly colourless wheals which became confluent and itched intensely for a short period. The next day the urticaria-like wheals had disappeared. Small slightly discoloured spots are all that remain of the lesions described above.

DISCUSSION

'Swimmer's itch' has recently been fully reviewed by Cort (1950) and readers are referred to his excellent article for further information. Here it is sufficient to comment on one or two aspects only. Some non-human cercariae, fresh and salt water, are able to penetrate the skin of man, but they cannot, except in very rare instances, develop any further. They remain in the epidermis where they are destroyed. Photographs taken of sections removed at biopsy and showing the gradual absorption of the cercariae are to be found in an article by Hammerli (1953). The invasion of the skin by the cercariae sets up a reaction which has been shown to vary. Some of this variation is due to individual susceptibility but most apparently is the result of sensitization. On first exposure most people show a mild reaction or none at all. This is well illustrated by our second volunteer. With each subsequent exposure the reaction increases in severity and the first volunteer may be quoted as an example of a severe reaction in an individual already sensitized by natural infection. The third volunteer shows an intermediate type of reaction consistent with some slight previous exposure, of which indeed he does give a history. Sensitization, which may last for years, is not necessarily specific, since severe reactions following penetration by another species of cercaria have been described (Olivier 1949). At the same time it is known that there are individuals who do not show increased sensitization with increased exposure.

According to Cort (1950) the most severe type of 'swimmer's itch' is a condition known as 'koganbyo' in Japan, in which urticarial lesions, severe itching with loss of sleep, and sloughing of the skin develop, the body and face swell up, and axillary and inguinal glands enlarge. The patient may have to be put to bed for some days.

There is some difference of opinion regarding the production of a dermatitis following the penetration of the skin by human cercariae. Barlow (1936) in Egypt showed that workers, already infected with *S. haematobium* and/or *mansoni* did show a dermatitis when re-exposed to cercariae of these trematodes. Our own experience in this connection relates to monkeys which

we repeatedly exposed to infection with either *bovis* or *mansoni*. They showed no signs of dermatitis or itching in the groin, where the cercariae were placed, until after about the fifth exposure. Here again, therefore, it appears that dermatitis is a sensitization phenomenon in human bilharziasis as well.

It is possible that this sensitization is linked with immunization. The cercariae in both 'swimmer's itch' and bilharziasis penetrate the skin on first exposure, the former perhaps to be finally killed off in the lungs or elsewhere and the latter to develop into adult worms. After one or more exposures a certain amount of immunity is developed and cercariae find it difficult or impossible to penetrate beyond the epidermis, where they are destroyed. The lytic and other protein substances released by them then produce the dermatitis described above.

Experimental work on the life history of the cercaria which produced the dermatitis noted above, the behaviour of the bilharzia complement-fixation reaction, eosinophilia and liver function, is proceeding.

SUMMARY

1. We report what we believe to be the first case of 'swimmer's itch' reported from Africa.
2. Classical 'swimmer's itch' was produced in 3 volunteers with cercariae shed by *Lymnaea natalensis* caught in the swamp where the patient bathed.

THE NATIONAL CANCER ASSOCIATION'S CAMPAIGN

LIONEL COHEN, M.B., CH.B. (RAND), D.M.R.T. (R.C.P. & S. ENG.)

'Cancer can be cured if diagnosed early and treated correctly,' the current slogan of the National Cancer Fund, is a commendable one and possibly true for a fair proportion of cases treated. However, the methods by which the National Cancer Association of South Africa proposes to implement this resolution requires careful review by the medical profession. Will the current campaign result in earlier diagnosis and the application of 'correct' treatment?

It must be remembered that to educate the public about cancer, without at the same time supplying facilities for therapy of the highest standard and ensuring such adequate therapy in every early case, will not in fact reduce cancer mortality. Indeed, it is the experience of all treatment centres that injudicious treatment applied to an early case results in far greater personal suffering than neglected cancer. It is also a common experience in South Africa and overseas that a large proportion of advanced and incurable cancers presenting in hospital have been incorrectly treated in the early stages of their disease.

If the problem is to be taken seriously, obviously some form of legal or moral compulsion is required in order to ensure that every cancer patient is referred to some centre adequately equipped for dealing with all the surgical, radiological and pathological aspects of this disease. The Association's self-imposed task is a heavy one, and implies a revision of many of the established standards of medical practice in this country.

CANCER DETECTION

The experience of American cancer detection schemes has shown that mass surveys for the detection of early cancer are ineffective. While roughly one new case of cancer appears annually for each thousand of the population, mass surveys may detect as few as one curable and 10 incurable cases per 100,000 subjects examined (Boston chest X-ray survey, for example), while the majority of

3. The 3 volunteers showed 3 types of reaction—negligible, moderate and severe. It is pointed out that the severity of reaction is generally due to sensitization.

4. From the literature and our own experience with monkeys it is shown that dermatitis can also be produced by the cercariae of *S. mansoni* and *S. haematobium* and that this dermatitis, as in 'swimmer's itch', is a sign of previous sensitization.

5. It is suggested that 'swimmer's itch' and dermatitis produced by cercariae of human bilharziasis are linked with immunization.

We are grateful to Dr. E. D. Arkell of Swaziland and Dr. James Gear of this Institute for bringing the case to our notice in the first place. To Mr. D. H. S. Davis, Government Ecologist and his staff we are greatly indebted for help in the field, and to Dr. Paul Keen, Non-European Hospital, Johannesburg, for the photograph accompanying this paper. To our medical colleagues on the staff of the S.A.I.M.R. and Dr. Paul Keen of the Johannesburg Non-European Hospital we are indebted for interpreting the skin lesions in medical terms. Above all we wish to thank the patient and his parents as well as the third volunteer for their wholehearted collaboration. We are indebted to Dr. L. J. A. Loewenthal for helpful discussion and supplying literature not readily available elsewhere.

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early cancers which must have been present in the population surveyed were missed.

Apparently only general practitioners or hospital casualty officers, who inevitably see the patient first, are in a position to make an early diagnosis. However, this facility can be overloaded when, as has been observed in the current drive, a large number of panicky subjects attend for a 'check-up' in the absence of symptoms, and indirectly result in some genuine cases being missed or falsely reassured.

It has been argued (radio broadcast, Dr. van Eck) that the reduction of cancer mortality reported from the U.S.A. and the U.S.S.R., following recent anti-cancer campaigns in both these countries, could be duplicated in this country by similar methods. This conclusion is almost certainly erroneous. In the U.S.A., where medical services are decentralized to the extent that several cancer hospitals, some with a predominantly surgical bent and others with more or less adequate radiotherapeutic services, as well as a number of private surgeons and radiologists, all compete for the same pool of malignancy, each selecting suitable cases, any conclusions on over-all salvage are statistically insupportable.

As treatments become more radical, automatic selection of earlier cases necessarily results in spurious improvements in apparent survival rates. In fact the writer's experience of American radiotherapeutic services indicates that, while many individual surgeons and radiologists are very competent, medical enterprise is so organized that the general standard of cancer treatment in the U.S. is very poor compared to some other countries, notably Scandinavia and Britain; so that emulation of American methods in this country is unlikely to reduce our over-all cancer mortality. Conversely, the improved survival rates reported from the highly centralized and socialized medical services in the U.S.S.R. may well be a reflection of the greater efficiency of polyclinic medicine in cancer control compared to competitive private practice.



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* "The superiority of 'Camoquin' over other antimalarials", Singh, I. & Kalyanum, T. S. Brit. Med. Jnl. 1952: 2: 312



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It is noteworthy that British centres report results among the best in the world without resorting to cancer detection drives, by developing centralized institutions, each equipped with a full range of diagnostic, surgical and radiotherapeutic facilities. It must be concluded that the improved results coincident with the cancer campaigns are the result, not of earlier diagnosis and treatment, but of advances in therapeutic techniques.

The statement recently broadcast on behalf of the Association by Dr. W. Nicol, that the lives of at least 100,000 South Africans would be saved through the application of modern knowledge, is in fact contingent upon the establishment of fully-equipped treatment centres, presumably in the larger Provincial hospitals, capable of handling an aggregate of 12,000 new cancer cases annually. 'It is no use asking people to seek advice early, if the hospitals lack the tools to do the job' (Editorial, *Rand Daily Mail*). It is equally essential to ensure that all cases diagnosed are notified to a central authority and referred to one of the above centres.

Since these requisites entail Provincial or Union Governmental action, and expenditure far in excess of the target of the National Cancer Fund, it is difficult to visualize the Association's role in 'improving cancer services'. However, only when the above machinery is established could the publicity drive envisaged be successful; without them it is merely an imposition upon the South African public.

CANCER TREATMENT

It may be argued that the above proposals entail an unacceptable degree of compulsion on the medical profession and patient, and that the discretion of the physician is sufficient to ensure that the patient is competently treated. Unfortunately, mismanagement of curable cancer is already all too frequent in both hospital and private practice in South Africa.

For example, although it is now established that in most curable cases of cancer there is a well-defined optimal dose of radiation, a large number of patients referred for hospital treatment are found to have been previously irradiated, by both private and hospital radiologists, with dosage far below accepted optimal values. While such inadequately-treated tumours almost invariably become resistant to all forms of treatment, and inevitably lead to another avoidable death from cancer, this malpractice is excused by reasoning that cancer is incurable anyway and that all treatment is merely palliative, or that severe radiation reactions are 'bad business' as they are considered undesirable by the referring physicians.

The foregoing should not be construed as affecting our radiotherapeutic services alone, since many other specialties (surgery, gynaecology, urology, dermatology, ENT, thoracic surgery and neuro-surgery) could benefit from a close liaison with competent radiotherapeutic consultants. Failure to distinguish between palliative and curative treatment, resulting in inadequate surgery, palliative radiotherapy, or the use of chemotherapeutic agents in localized malignancy, rendering subsequent radical therapy impossible, are probably the most frequent causes of failure in cancer control in South Africa.

Obviously, unless every treatment centre, hospital and private, be induced to furnish statistics on the staging, management and results in all cases treated, the efficiency of treatment cannot be assessed or controlled. It would be interesting to hear from the officers of the Cancer Association how they propose to circumvent the economic and ethical difficulties involved in controlling the standards of therapy. Until this is done, however, the aims of the Association are doomed to failure at the outset.

REGIONAL CENTRES

It follows from the foregoing that provision of facilities for efficient treatment is the first consideration in cancer control in South Africa. It is necessary that a number of centres be established, each fully equipped with surgical, pathological, and a full range of radiotherapeutic facilities (radium, low- and high-voltage X-rays, and at least one source of super-voltage radiation), with the appropriate ancillary personnel (physicists, engineers, technicians and recording, statistical and secretarial staffs). It has been shown in Britain that, when this minimal range of equipment and personnel has been acquired, the centre is able to treat up to 5,000 new cases annually, and is consequently adequate for a population up to 5 millions.

The optimal figure for South Africa with its lower population density is somewhat smaller and hence entails a greater capital expenditure per patient treated. A fair compromise would seem to be one centre for each 2 million population of all races; i.e. one at each of the 6 central Provincial hospitals (Cape Town, Port Elizabeth, Durban, Bloemfontein, Johannesburg and Pretoria). Where European and non-European hospitals are separately located, the treatment centre might be subdivided into 2 units (not duplicated) sharing in common a rotating medical and radiographic staff, with a single treatment policy, a single statistical and records section, and a single physics department and radium office.

In a recent radio broadcast, a 'radiologist' representing the Association advocated a district radiotherapy service, staffed by part-time radiologists and financed by the Cancer Fund. Such a proposal would deny rural patients the benefit of efficient treatment, and can only increase cancer mortality. Further, the danger of a multiplicity of smaller centres within a single geographical region, is exemplified by the following avoidable tragedies on record in our files. A patient may start treatment at a peripheral hospital, which later finds itself insufficiently equipped to manage additional problems arising and refers the patient to a larger centre. On checking the records it is then found that the treatment given has not been adequately controlled as to physical and biological dosimetry, so that it is not possible safely to continue with more radical therapy, which might have been curative if the patient had started treatment in the larger centre. Also, patients have attended for treatment at a central hospital, neglecting to mention or actively denying previous treatment at another centre, with resultant overdosage, radionecrosis and recurrence. Both these accidents have occurred on the Witwatersrand where only one or two radiotherapy units exist in peripheral hospitals. The prospect of a multiplicity of rural units is an alarming one.

CANCER RESEARCH

The extent to which cancer research in South Africa may be expected to contribute towards diminishing the cancer death rate is of prime interest both to the medical profession and to lay contributors to the National Cancer Fund. This issue is obscured by the frequent publication of incomplete, uncritical and often wholly misleading information in the press. It is a disturbing fact that of a score or so of recent newspaper-releases on more or less dramatic developments in cancer research, reports emanating from both overseas and local institutions, examination of the sources of such information showed that not a single one of them was scientifically authenticated. When the possibility of cure is either claimed or implied in these reports, the reactions of cancer patients and their relatives is, as may well be imagined, especially distressing. While the Association no doubt appreciates the necessity of combating this undesirable trend, a fair proportion of its own naively optimistic press-releases is based on unpublished and frequently discredited information.

In point of fact, the greater part of contemporary cancer research has neither scientific nor clinical value, papers with any promise of saving human life appearing but rarely. In this respect South African research is certainly no exception. Conceivably, research may help to diminish the cancer death rate either by improving preventive or curative techniques. It is claimed that South Africa is in a position to investigate racial and environmental aetiological factors, which may lead to effective preventive measures. Demographic surveys of the more primitive rural African communities, a rapidly wasting scientific asset, should be undertaken immediately if this material is not to be lost for ever.

Research into improved curative techniques, on the other hand, is of course a function of the larger treatment centres, and again is entirely dependent upon the Provincial hospitals. Unless, therefore, some radically new departure is visualized, it would seem to be an unfair imposition on public generosity to hold out hopes that any research that the Association might sponsor could lead to a diminished cancer mortality in the foreseeable future.

It is now the manifest duty of the Cancer Association to inform the profession and the public of its intentions with regard to all the foregoing considerations, and in particular in relation to the Provincial hospital services, which will necessarily have to provide the therapeutic facilities before any of the objectives of the cancer campaign can possibly be realized.

SOUTH AFRICAN RESIDENTS AT LONDON HOUSE

Mr. E. C. Pepper, Warden of London House, Guilford Street, London, W.C.1, writes:

In spite of increased capacity, London House is always full and the demand is ever increasing. It is interesting to note that since London House came into being, in a very small way in 1930, 791 South Africans have been in residence. There are 69 here now, which is about the average at any one time, and this number represents a cross-section of professional and business post-graduate work. Many examination successes have been gained during the past 12 months by South African residents of London House and among them are:

F.R.C.S.	B. Shandling (Cape); D. J. Retief (Orange Free State); W. Grundill, D. R. Scorgie (Transvaal).
F.R.C.S. (Edin.)	J. K. G. Grieves (Natal); J. Fogel, H. D. Ritchken (Transvaal).
Primary F.R.C.S.	I. Jaffe, M. Lange, H. Perkin, B. Sender (Cape); S. S. Grove, J. A. Lichtman (S.W. Africa); J. E. Aling, L. H. Katzen, J. A. Pratt-Johnson, H. D. Ritchken, E. R. Rosenberg (Transvaal).
M.R.C.O.G.	B. Danzig (Transvaal).
M.R.C.P.	D. G. le Roux, R. Slome (Cape).
M.R.C.P. (Edin.)	G. B. Landsman (Cape); J. L. Braudo, M. Braudo, D. F. Harris (Transvaal).

D.A.

D.C.H.

D.I.H.

D.M.R.D.

do. 1st part

M.R.C.S., L.R.C.P.

D.D.O.

Prim. F.D.S., RCS.

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A. Halamandres (Transvaal).

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J. Dresner (Transvaal).

The plans for the new building of the Sister Trust for women and married students are now out to tender but a start was made in temporary buildings some 2 years ago. The capacity for single women and the number of flats is limited but, even so, in this short time there have already been 73 South Africans in residence. There is no doubt that a very real demand for such accommodation does exist which is why every attempt is being made to push ahead with the new building.

The Burn, in Scotland, has also had a successful year and is becoming increasingly popular both for holidays and study.

It is a very real pleasure to meet friends from South Africa at London House, Sister House or The Burn and we do hope that when you next come to England you will be sure to pay us a visit.

PASSING EVENTS : IN DIE VERBYGAAN

The University of Cape Town (Department of Obstetrics and Gynaecology), in conjunction with the South African Society of Obstetricians and Gynaecologists, will be holding a Gynaecological and Obstetrical Congress in Cape Town on 19-22 January 1955.

* * *

Prof. R. H. Goetz, Research Associate Professor of Surgery, University of Cape Town, has been invited to become an Honorary Member of the American College of Angiology, which has just been organized for the primary purpose of co-ordinating research and other activities related to the field of angiology and of certifying specialists in this new field. Educational programmes will also be instituted.

* * *

Union Department of Health Bulletin. Report for the 7 days ended 18 November 1954.

Plague. Orange Free State: One (1) Native death on the farm Bakkieskuil in the Kroonstad district. Diagnosis based on clinical grounds only. Three (3) Native cases on the farm Lakeside near Koppies in the Vrededorst district. Diagnosis based on clinical grounds only. All necessary precautionary measures are being taken in connection with the abovementioned two outbreaks.

Precautionary Measures Against Plague: The public is urged to report any abnormal rodent mortality which comes to their notice immediately to the local magistrate or nearest police station.

The application of D.D.T. is the most effective precautionary measure against fleas, which convey plague from rodents to human beings. All floors, burrows, holes and crevices, etc., as well as bedding and clothing, where fleas are suspected to be present should be thoroughly dusted with 10 per cent D.D.T. in talc, at the rate of approximately half a pound per room. Any person required to work in a place where he may be exposed to infected fleas, is advised to wear gumboots and overalls and to

dust the inside of the gumboots with Pyrethrum powder or other knockdown insecticide. If overalls or gumboots are not available, socks should be pulled over trousers at ankles. Measures should at the same time be taken to destroy rodents by gassing, poisoning or trapping. The ordinary cyano-gas pump may also be used for dusting burrows and other inaccessible places with D.D.T. powder.

Smallpox: Nil.

Typhus Fever. Cape Province: Four (4) Native cases in the Mabobo location and one (1) Native case in the Toleni location in the Mount Frere district. The diagnosis of all these cases has been confirmed by laboratory tests.

Epidemic Diseases in other Countries:

Plague: Nil.

Cholera in Chittagong, Dacca, Chalna (Pakistan).

Smallpox in Bombay, Calcutta, Kanpur (India); Saigon-Cholon (Viet-Nam).

Typhus Fever: Nil.

* * *

Napt Commonwealth Fellowship. The National Association for the Prevention of Tuberculosis is offering for 1955-56 a new Commonwealth Fellowship of the value of £350 to enable a medical graduate to do post-graduate study in tuberculosis in the United Kingdom. The intention of the award is to provide training and experience for a doctor who will subsequently play his part in the control of tuberculosis in his own country, and the course of study in Great Britain should last at least 3 months.

Full particulars can be obtained from The National Association for the Prevention of Tuberculosis, Tavistock House North, Tavistock Square, London, W.C.1, and applications should be received not later than 31 March 1955. The successful candidate will be required to arrive in the United Kingdom before 20 June of that year if possible.

This Fellowship is in addition to the Hunter Commonwealth Scholarship (value £350) already announced.

NEW PREPARATIONS AND APPLIANCES : NUWE PREPARATE EN TOESTELLE

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P.D. & Co. (Pty.) Limited the South African Subsidiary of Parke, Davis and Company Limited announce the introduction of the following two new preparations:

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3. Patients suffering from infections of the mouth and throat, and others experiencing difficulty in swallowing.
4. Cases of intestinal obstruction and where continued vomiting is encountered.
5. In typhoid fever, particularly where perforation has taken place.
6. In surgery, both pre-operatively and post-operatively.

Chloromycetin Intramuscular has also been used with satisfactory results in the treatment of venereal diseases, and this method of administration is often preferred owing to the absence of adequate supervision when drugs are given orally.

Administration and Dosage. Administration in all cases should be by deep intramuscular injection. Subcutaneous injection must be avoided.

The recommended dosage for adults is 1 g. Chloromycetin every 12 hours. Children should receive 150 mg. per kg. body-weight daily for the majority of the infections and the following daily dosage is suggested for infants and children of normal weight: 6 months 500 mg., 1 year 1½ g., 2 years 1½ g., 3 years 2 g.

Preparation of Suspension. To the vial containing 1 g. of Chloromycetin add aseptically 2.5 c.c. water and shake to produce a uniform suspension. The vial will then contain sufficient excess Chloromycetin in suspension to permit withdrawal and administration of 2.5 c.c. containing 1 g. Chloromycetin.

Package Information. Packed in Rubber-capped Steri-vials each containing 1 g. Chloromycetin for preparing 2.5 c.c. of Suspension.

References:

- Schoenbach *et al.* (1952): *Amer. J. Med.*, **12**, 263.
 Ross *et al.* (1952): *New Engl. J. Med.*, **247**, 541.
 Harb *et al.* (1951): *J. Vener. Dis. Inform.*, **32**, 177.
 Olansky *et al.* (1953): *Amer. J. Syph.*, **37**, 253.
 Robinson, R. C. V. and Wells, T. L. (1952): *Ibid.*, **36**, 264.

CHLOROSTREP

Synergism has been observed between Chloromycetin and Streptomycin (dihydro-streptomycin). Chlorostrep is a combination of these 2 antibiotics. In mixed infections where some portions of a microbial population may be susceptible to one drug and other portions to another, it is obvious that the response will be better to a combination of these 2 drugs than either alone. The chief advantage of Chlorostrep is that dihydro-streptomycin acts mainly on those organisms within the intestinal lumen, while Chloromycetin, with its wide range of action and almost complete absorption from the gastro-intestinal tract, deals effectively with any systematic infection which may develop. It has been observed that there is a marked and constant depression of the coliform group of micro-organisms and the pathogenic streptococcus following the administration of Chlorostrep. There was, however, no decrease in the total bacterial count of the intestinal flora.

Indications. Whilst Chlorostrep is mainly indicated in abdominal surgery (colonic and rectal surgery in particular), and in the treatment of enteric diarrhoeal infections, it has been demonstrated with streptomycin that the addition of another drug which works through a different mechanism of action (e.g. Viomycin, P.A.S. etc.) minimizes the incidence and rate of emergence of bacterial resistance. A combination such as Chlorostrep, in which the constituents have a different mechanism of action is, therefore, worthy of trial in acute infections in which resistance commonly occurs.

Dosage and Administration. The dosage of Chlorostrep is based largely on the Chloromycetin content, since dihydro-streptomycin has little, if any, systematic effect owing to its non-absorption from the gastro-intestinal tract. In enteric infections it is suggested that a dosage of 2-4 capsules is given every 6 hours to adults and older children.

Chlorostrep is effective against mixed infections commonly encountered in operative procedures involving the intestinal tract. Pre-operatively it is suggested that a dosage of 2-4 capsules is given every 6 hours for 2-3 days and is continued post-operatively for 5 or 6 days when the oral intake of fluid is reinstituted.

Packing Information. Chlorostrep Kapsels, each containing 125 mg. Chloromycetin and 125 mg. dihydro-streptomycin are supplied in bottles of 12.

REVIEWS OF BOOKS : BOEKRESENSIES

ELECTROCARDIOGRAPHY

Electrocardiography. By E. Grey Dimond, M.D. (Pp. 261, with 272 illustrations. £5 19s. 0d.) St. Louis: The C.V. Mosby Company. 1954.

Contents: 1. The Direct Writer, its Advantages and Limitations. 2. Technique. 3. Organization of an Electrocardiograph Station. 4. Methods of Teaching Electrocardiography. 5. Vectors, Galvanometers, and Volume Conductors. 6. Electrocardiographic Leads. 7. Lead Relationships. 8. Depolarization and Repolarization. 9. Timing, Amplitude, and Nomenclature. 10. Spatial Orientation and Axes of Rotation. 11. Ventricular Gradient and QRS-T Angle. 12. Hypertrophy. 13. Bundle Branch Block. 14. Myocardial Disease. 15. Congenital Heart Disease. 16. The Arrhythmias. 17. Effect of Electrolytes, Digitalis, and Malnutrition on the Electrocardiogram. 18. Authority vs. Authority. Index.

As long ago as 1920, Mann first derived vector loops from the standard electrocardiograph. Vectorcardiography, however, is not yet applied as a routine measure to the investigation of heart disease, and there are several reasons for this. There is no uniformity of technique or interpretation among the different workers in this field; adequate electro-pathological correlations are not yet available; the method is not readily applicable to the study of

cardiac arrhythmias; and the apparatus does not lend itself to routine bedside use.

Nevertheless, a proper appreciation of conventional (scalar) electrocardiographic patterns is best achieved by the application of the dynamic vectorcardiological theories. In this book, Dr. Dimond exhorts his students and readers to interpret scalar electrocardiographs in vector terms and in an admirable manner shows how this is done.

The result is a complete manual of practical electrocardiography, because not only are the basic principles fully explained, but much useful information is given on the working of the E.C.G. machine, differential diagnosis and treatment of artefacts, normal standards, the technique of effort tests and so on.

The emphasis throughout is on the clinical application and the book is liberally illustrated with over a hundred well-reproduced graphs, correlated with case histories, radiography and catheter studies. The arrhythmias and congenital diseases of the heart are particularly well treated but the reviewer was disappointed not to find more about the normal E.C.G. of children and of pregnant women—omissions common to most texts on cardiology. A

most interesting final chapter 'Authority vs. Authority' reveals some of the limitations of the F.C.G., and the author quotes the consistently divergent views of eminent cardiologists on the criteria for left ventricular enlargement.

The author's style is generally pleasant and lucid, despite occasional American neologisms (*antiarrhythmic effect*; *diagrammed* etc.). The book is well produced and is enthusiastically recommended to those seeking a knowledge of modern electrocardiography.

H.G.

CLINICAL DIET

Mayo Clinic Diet Manual: Second Edition. By The Committee on Dietetics of the Mayo Clinic. (Pp. 247.) Philadelphia and London: W. B. Saunders Company. 1954.

Contents: 1. Standard Hospital Diets. 2. Standard Tube Feedings. 3. Operations: General Dietary Program. 4. Gastric and Duodenal Ulcer: Dietary Program. 5. Obstructing Gastric and Duodenal Lesions: Dietary Program. 6. Gastric Surgery: Dietary Program for Use After Operations on the Stomach. 7. Diseases of the Gallbladder: Dietary Program. 8. Diseases of the Liver: Dietary Program. 9. Colostomy, Ileostomy or Resection of Bowel: Dietary Program. 10. Operations on the Lower Part of the Intestinal Tract: Dietary Program for Use Before and After such Operations. 11. Operations on the Colon or Vaginal Hysterectomy: Dietary Program for Use After these Operations. 12. Irritable Bowel with Constipation: Dietary Program. 13. Chronic Ulcerative Colitis: Dietary Program. 14. Sprue: Dietary Program. 15. Allergy: Dietary Program. 16. Suspected Food Allergy: Trial Diet. 17. Urinary Calculi: Dietary Program. 18. Cardiovascular Diseases: Dietary Program. 19. Diabetes: Dietary Program. 20. Gout: Dietary Program. 21. Hypercalcemia: Dietary Program.

22. Hyperlipidemia: Dietary Program. 23. Iron Deficiency Anemia: Dietary Program. 24. Obesity: Dietary Program. 25. Pregnancy: Dietary Programs. 26. Underweight: Dietary Program for Simple Type. 27. Underweight Due to Anorexia: Dietary Program. 28. Infants: Dietary Program. 29. Hospital Diets for Children. 30. Celiac Disease in Children: Dietary Program. 31. Epilepsy in Children: Dietary Program. 32. Chronic Renal Diseases of Children: Dietary Program. 33. Low Calcium Test Diet (Quantitative). 34. High Potassium, Low Sodium Chloride Test Diet. 35. High Purine Test Diet. 36. Test Diet for Steatorrhea and for Nitrogen Excretion. Appendix. Index.

This book presents the current dietary practices at the Mayo Clinic and associated hospitals. The Contents List (above) makes it apparent that almost every condition in which diet has a role in therapy is covered. It is therefore surprising that management of acute renal failure and the use of the Borst diet are not included.

In each diet not only are the foods listed which are permitted and excluded, but attention is paid to the total calorie requirements and to adequacy of vitamin, iron and calcium content.

As is only to be expected from a publication emanating from an institution of the calibre of the Mayo Clinic, this booklet is authoritative and reliable. It is surprising that in the chapter on obesity the importance of fluid retention in many cases of obesity is overlooked.

Whilst this book is a very useful reference book, and very suitable for dieticians attached to hospital staffs, it is not presented in a manner which is likely to appeal to the general practitioner. The diets are not written in a form which can be transcribed verbatim for use by the patient.

The height—weight—age tables in the appendix are useful.

B.G.S.

CORRESPONDENCE : BRIEWERUBRIEK

COMMISSION OF ENQUIRY IN REGARD TO UNDESIRABLE LITERATURE

To the Editor: I should like to enlist the interest of medical practitioners in the abovementioned Commission of Enquiry recently appointed by the Governor General. His Excellency has appointed Professor G. Cronje as Chairman, and D. F. Abernethy, Esq., Mrs. D. E. de la Bat, Dr. E. Greyling, and G. F. Laurence, Esq., as members of the Commission to enquire into, report on, and make recommendations in regard to—

(a) the combating of the evil of indecent, offensive or harmful literature and pictorial matter printed or manufactured, published and/or distributed in the Union of South Africa and the Territory South West Africa;

(b) the desirability and manner of co-ordinating any procedures recommended under (a) with the existing system of control of imported literature and pictorial matter; and

(c) any other related matter.

This Commission, which was officially, instituted on 17 November 1954 will provide medical practitioners, as well as ministers of religion and social scientists, with the long-awaited opportunity of recording their views in regard to the influence of a brand of harmful literature on the youth of this country.

Louis F. Freed

2 Barbican Buildings
President Street
Johannesburg
29 November 1954

THE SPECIALIST REGISTER

To the Editor: There is at present a bitter controversy over the Specialist Register. Is this fuss necessary at all? Any practitioner can practise as a consultant without being on a special register.

1. A general practitioner can confine his practice to a speciality.

2. He can inform his colleagues of that fact, verbally and by post.

3. He can charge fees commensurate with his services, i.e. at specialist rates, provided the patient is informed beforehand.

4. He can exhibit a plate indicating that he is confining himself to one speciality, to save patients wasting their time coming to him with other illnesses. There is no reference to the term 'specialist' on the plate, merely, for example, the words 'E.N.T. only', etc.

5. If he is worth his salt, he is bound to get adequate support from the G.P.s., particularly if his specialist colleagues persist in

doing G.P. work, i.e. seeing patients not referred by a G.P., or not handing back referred cases.

I know of a medical practitioner who has been practising a branch of medicine for years. If asked if he is a specialist, his reply is, 'No, sir! I am an expert!'

Pittalus

[Our correspondent's attention is called to the following extracts from the South African Medical and Dental Council's Rules:

'A medical practitioner or dentist in general practice may restrict his practice to a particular subject of medicine or dentistry, but is not permitted to circularize his colleagues or other persons to this effect, since this may create the impression that he is a specialist.'

'A name-plate shall not contain more than the practitioner's name, title, profession, qualification or degree, his speciality, if any, if it has been registered by the Council, his telephone number(s) and his hours of consultation.'

These rules are to be found in the Association's publication *A Guide to the Maintenance of Ethical Standards*, pp. 8 and 9; also in the *Journal* (1953), 27, 333. *Editor.*]

MONGOLISM AND FACE PRESENTATION

To the Editor: In a fairly extensive search of the literature at my disposal, I have not been able to find references to a causal relationship between mongolism and face presentation.

The causes of extension of the head leading to a face presentation are generally given as:

- (1) Cord round the neck
- (2) Tumour of the neck
- (3) Dolichocephalic skull
- (4) Obliquity of the uterus
- (5) Contracted pelvis
- (6) Pelvic tumours
- (7) Hydramnios

However, in the last two cases of face presentation I saw, the children were both mongolian idiots. Delivery in both cases occurred without difficulty. Hyperextensibility is, of course, a common feature of mongolism and this probably accounted for the face presentation.

J. Helman, M.B., B.Ch.

4 Joubert Street
Vasco, C.P.
24 November 1954

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Applications are invited from fully qualified, registered Medical Practitioners in respect of the abovementioned appointment.

The Fund operates on a closed panel system and medical officers will be required to provide consulting room, domiciliary and hospital services (when necessary) for Fund members and their dependants.

Further particulars will be furnished by the Fund's Secretary to prospective applicants on request.

Applications must reach the Secretary of the Fund, P.O. Box 8477, Johannesburg, by Saturday 18 December 1954.

Motor Industry Sick Benefit Fund

APPOINTMENT OF PART-TIME MEDICAL OFFICER FOR BRITS

Applications are invited from fully qualified, registered Medical Practitioners in respect of the abovementioned appointment.

The Fund operates on a closed panel system and medical officers will be required to provide consulting room, domiciliary and hospital services (when necessary) for Fund members and their dependants.

Further particulars will be furnished by the Fund's Secretary to prospective applicants on request.

Applications must reach the Secretary of the Fund, P.O. Box 8477, Johannesburg, by Saturday 18 December 1954.

MEDIESE STUDENT VERLANG WERK

Mediese student, vierde jaar afgelê, verlang werk vir sakgeld gedurende Januarie 1955. Enige billike offer welkom. Doen aansoek A.X.F. Posbus 643, Kaapstad.

The Chamber of Mines Hospital

Applications are invited from Registered Medical Practitioners for the following appointments:

- 2 Part-time Ophthalmologists.
- 3 Part-time Orthopaedic Surgeons.
- 3 Part-time General Surgeons.

Details of the conditions and emoluments pertaining to these appointments are obtainable on application by bona fide applicants.

The successful applicants must be prepared to assume duty on 1 January 1955.

Applications addressed to the Manager, The Rand Mutual Assurance Company, Limited, P.O. Box 413, Johannesburg, will be received up to noon on Wednesday 22 December 1954.

SPRINGFIELD COLLIERIES BENEFIT SOCIETY

Applications are invited from registered medical practitioners for appointment to the Springfield Collieries benefit society in the district of Balfour, Transvaal.

Full particulars are obtainable from the Secretary, Springfield Collieries Benefit Society, P.O. Grootvlei.

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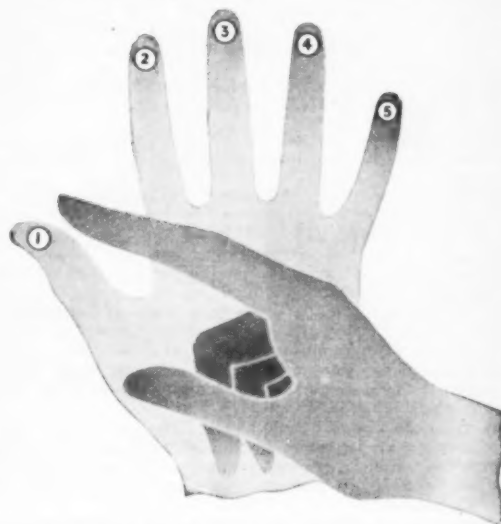
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P. 31.

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ASSISTANTS/LOCUMS REQUIRED ASSISTENTE/PLAASVERVANGERS BENODIG

- (708) Southern Rhodesia. A locum is required for a large general practice, as from second week in April 1955, for one month. Preferably man who would consider staying on as an assistant with view to partnership. Salary £100 p.m. plus all found. A car is not essential.
- (706) Wes-Transvaal. 'n Assistent is benodig vanaf 2 Januarie 1955. Salaris £100 p.m. plus vry petrol en olie en diens van kar plus £10 p.m. kartoelae.
- (705) An assistant is required for a large partnership practice in the Free State. Excellent terms to be arranged. 120 miles from Johannesburg.
- (704) Near Johannesburg. A locum is required for 3 months, as from 1 December or later. Large partnership practice. £3 3s. 0d. per day, plus all found, plus a car allowance.
- (699) Locum is required as from 12 December for 1 month. Will suit a newly qualified man. £3 3s. 0d. per day, plus all found. Twelve miles from Johannesburg.
- (692) Large hospital town, within easy reach of Johannesburg. Locum as from 12 December for 1 month. Partnership practice. £3 3s. 0d. per day plus all found and a car allowance.
- (690) Groot Transvaalse dorp. Plaasvervanger vanaf 18 Desember tot 18 Januarie. £3 3s. 0d. per dag, plus alles vry. Aangename pos.
- (689) Transvaal—vennootskap praktyk—100 myl vanaf Pretoria Plaasvervanger vir Desember en Januarie in hierdie vennootskap praktyk, en volgens keuse een maand op dorpie 18 myl daarvandaan. Salaris £90 p.m. vry losies, petrol en olie en £5 per 1,000 kartoelae.
- (666) Vrystaat. Plaasvervanger vir een maand vanaf 15 Desember. Terme, £3 3s. 0d. per dag, vry losies, petrol en olie en 'n kartoelaag van £10 per 1,000 myl.
- (652) Large hospital town close to Johannesburg. A Locum is required as from 10 December for one month. Salary £3 3s. 0d. per day, plus all found and a car allowance. Native practice. Practically no night work.
- (627) O.F.S. Locum required as from 10 December for one month. Salary £3 per day, plus all found. Car could be provided.
- (640) O.F.S. Goldfields. Locum is required for December and January. £3 3s. 0d. per day, plus free board and lodging, petrol and oil. Partnership practice.
- (688) Reef hospital town. Locum for one month as from 13 December. Salary £3 3s. 0d. per day plus all found. A car could be provided. Partnership practice.

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(1834) Excellent practice in Eastern Province town with hospital facilities for surgery. Gross income 1954—£5,200. Expenses low. Wealthy wool district. Goodwill £2,000 which includes all surgery furniture. Modern house for sale at £4,200, bond £3,400 available.

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- (PD30) Durban. Old-established good class, mainly European practice. Premium £3,000. Owner intends specializing.
- (PD31) Natal Inland. Unopposed prescribing practice, mainly Native. Monthly cash receipts average £450. Premium required £2,500 includes surgery, furniture and instruments. House for sale. All sporting facilities.
- (PD32) Northern Natal. Well established general mixed practice of 20 years standing. M.O.H. and D.S. appointments. All hospital facilities. Premium £1,500 including surgery furniture and drugs. House £12 per month. For immediate sale.
- Physician Specialist unopposed Practice for immediate sale. Inland City Premium £2,500 includes £1,000 equipment.

LOCUMS REQUIRED

- (SV5) Locum for January. £3 3s. per day plus board and lodging. £10 car allowance and petrol. Natal Hospital town. Travelling allowance to and from practice for reasonable distance.
- (LD6) Natal. From 8 to 23 January 1955. Mainly non-European dispensing with mine Hospital appointment. Own car necessary. £3 3s. per day, all found.

ASSISTANT REQUIRED

(NC5) Assistant required in general practice, country practice. 75% non-European. No surgery or midwifery undertaken. Very little night work. Commence December 1954. Salary £1,200 p.a. 1-hour drive from Durban.

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Experienced practitioner requires practice or partnership. Higher qualifications and overseas post graduate experience. Mainly interested in Paediatrics. Rhodesia considered. Apply A.W.W., P.O. Box 643, Cape Town.

HUIDDOKTERS—BENODIG

Aansoek word hiermee gevra op vorm Z 83, vir interns by die Voortrekkerhospitaal, Kroonstad om op 1 Januarie 1955 of so vroeg moontlik dienste te aanvaar. Applikante moet inwonen en die aanstelling is onderhewig aan die O.V.S.-Hospitaalordonnansie nr. 13 van 1933 met wysigings daartoe. Applikante moet by die S.A. Geneeskundige Raad geregistreerd wees.

Aansoek moet ondergetekende so spoedig moontlik bereik.

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Kroonstad
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Aansoeke moet gerig word aan die Geneeskundige Superintendent of Verantwoordelike Geneesheer van die betrokke hospitaal en moet volle besonderhede bevat aangaande die ouderdom, professionele, akademiese en taalkwalifikasies, ondervinding en huwelikstaats van die applikant en moet voorts 'n aanduiding bevat van die vroegste datum waarop diens aanvaar kan word. Afskrifte van onlangse getuigskrifte moet aangeheg word by aansoeke.

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Benewens jaarlikse salaris en lewenskostetoelae ontvang voltydse werknemers spoorwegkonsessie en word verlof toegestaan ooreenkomstig die hospitaalverlofregulasies.

Die sluitingsdatum van aansoeke vir die poste is 29 Desember 1954.

Pos	Hospitaal	Emolumente	Aanmerkings
Senior Radioloog en moontlike daaropvolgende vakatures van Radioloog	Algemeen, Johannesburg	£200 p.j.	Geregistreerde Mediese Praktisyn. Hoër graad in Radiologie 'n vereiste.
Assistent Radioloog	Algemeen, Johannesburg	£1,800 p.j. £1,200 x 50—1,500	do. Geregistreerde Mediese Praktisyn. Hoër graad in Radiologie 'n aanbeveling.
Radioloog	Klerksdorp	£1,800 p.j.	Gekwalifiseerde Radioloog. Moet diens doen by Klerksdorp-, Potchefstroom- en Wolmaransstad-hospitale.
Junior Spesialis	Pretoria	£1,200 x 50—1,500	Geregistreerde Mediese Praktisyn met hoër kwalifikasies in Interne Geneeskunde.
Deeltydse Junior Spesialis (Ortopedie)	Pretoria	£820 p.j. 4 sessies per week	Geregistreerde Mediese Praktisyn met kwalifikasies in Ortopedie.
Deeltydse Algemene Praktisyn (Ginekologie en Verloskunde)	Boksburg-Benoni	£255 p.j. 1½ sessies per week	Geregistreerde Mediese Praktisyn.
Chirurgiese Registrateur (Doserend)	Algemeen, Johannesburg	£620—780—820—860	Geregistreerde Mediese Praktisyn. Moet minstens twee jaar gekwalifiseerd wees.

Pos	Hospitaal Vereniging	Emblumente	Aanmerkings
Kliniese Assistent		£620, 780, 820, 860	Geregistreerde Mediese Praktisyn. Moet minstens twee jaar gekwalifiseerd wees.
Kliniese Assistent (Oor, Neus en Keel)	Pretoria	do.	do.
Kliniese Assistent (Interne Geneeskunde)	Krugerdsdorp	do.	do.
Kliniese Assistent (Narkose)	Vereeniging	do.	do.
Mediese Beampte	Verre Oosrand, Pk. New State Areas Edenvale, Pk. Raedene (2)	do.	Geregistreerde Mediese Praktisyn.
Ongevalle Beampte	Vereeniging Verre Oosrand, Pk. New State Areas Boksburg-Benoni	do. do.	do. do.
Senior Huisdokter	Klerksdorp Witbank	£480 p.j. Plus losies en inwoning of 'n toelae van £120 p.j. ten opsigte van losies en inwoning	Geregistreerde Mediese Praktisyn.
Senior Huisdokter (Ortopedie)	Pretoria Vereeniging	do. do.	do. do.
Senior Inwonende Mediese Beampte	Verre Oosrand, Pk. New State Areas	do.	do.
Of Intern	Vereeniging	£240 p.j. Plus losies en inwoning of 'n toelae van £120 p.j. ten opsigte van losies en inwoning	—
Intern	Verre Oosrand, Pk. New State Areas Boksburg-Benoni Klerksdorp (2) Witbank	do. do. do.	— — —

48325

VENNOOT BENODIG

Vennootskappraktyk in baie groot vooruitstrewende hospitaaldorp in N.-Transvaal. Vennoot tree uit 1 April 1955. Inkomste baie goed. Alleenlik privaat praktyk onderneem. Algemene Praktisyn met ondervinding in algemene praktyk en ook belangstelling in snykunde verlang. Doen aansoek A.X.C., Posbus 643, Kaapstad.

Suid-Afrikaanse Wetenskaplike en Nywerheidsnavorsingsraad

BEURS VIR NAVORSING NA OORSAKE VAN NARKOSESTERFGEVALLE

Aansoeke word ingewag van gekwalifiseerde medici vir 'n beurs van £1,200 om voltydse navorsing na die oorsake van sterfgevalle onder narkose te onderneem. Wanneer nodig, sal vervoer en verblyfskoste betaal word.

Die beurs is in die eerste instansie vir een jaar maar mag vir 'n verdere twee jaar hernu word. Die beurshouer sal hoofsaaklik in Pretoria en Johannesburg werk. Ondervinding van narkose en/of patologie sal 'n aanbeveling wees.

Aansoeke waarin volle besonderhede, insluitende publikasies of vorige navorsingswerk, vermeld word, moet die Sekretaris/Tesourier, W.N.N.R., Posbus 395, Pretoria, teen 15 Januarie 1955 bereik. 46852

South African Council for Scientific and Industrial Research

BURSARY FOR RESEARCH INTO CAUSES OF ANAESTHETIC DEATHS

Applications are invited from medically qualified persons for a bursary of £1,200 to undertake full-time research into the causes of anaesthetic deaths. Transport and subsistence will be provided when necessary. Bursary is initially for one year but may be renewed for a further two years. The bursar will work mainly in Pretoria and Johannesburg. Experience in anaesthetics and/or pathology will be a recommendation.

Applications, giving full information, including publications or previous research work, to reach Secretary/Treasurer, C.S.I.R., P.O. Box 395, Pretoria, by 15 January 1955. 46852

Municipality of Randfontein

NOTICE NO. 107 OF 1954

VACANCY : PART-TIME MEDICAL OFFICER OF HEALTH
Applications are hereby invited from qualified Medical Practitioners for the position of Part-time Medical Officer of Health.

Detailed particulars of the conditions and requirements attached to the post can be obtained from the undersigned.

Applications should be submitted on the Council's prescribed form which can be obtained from the undersigned and should reach the Town Clerk, Municipal Offices, Randfontein, not later than 12 noon on Friday 31 December 1954.

Canvassing for appointment in the gift of the Council is strictly prohibited and any proof thereof will disqualify a candidate.

F. A. Meltzer
Town Clerk

Municipal Offices
Randfontein
18 November 1954

D. C. no. 4181

Munisipaliteit, Randfontein

KENNISGEWING NR. 107 VAN 1954

VAKATURE : DEELTYDSE MEDIESE GESONDHEIDSBEAMPTTE

Aansoeke word hiermee ingewag van gekwalifiseerde Mediese Praktisyne om die betrekking van Deeltydse Mediese Gesondheidsbeampte.

Volledige besonderhede van die diensvoorwaardes en vereistes aan die pos verbonde, is van die ondergetekende verkrygbaar.

Aansoeke moet op die Raad se amptelike aansoekvorm wat van die ondergetekende verkry kan word, ingedien word en moet die Stadsklerk, Munisipale Kantoor, Randfontein, uiterlik on 12-uut middag op Vrydag 31 Desember 1954, bereik.

Gunsverwing om aanstelling in die diens van die Raad is streng verbode en enige bewys daarvan sal 'n applicant diskwalifiseer.

F. A. Meltzer
Stadsklerk

Munisipale Kantore
Randfontein
18 November 1954

D. C. no. 4181

Provincial Administration of the Cape of Good Hope

HOSPITALS DEPARTMENT

HOSPITAL BOARD SERVICES: VACANCY

Applications are invited from registered medical practitioners for appointment to the following vacant post:

Division	Post	Institution	Emoluments	Closing Date
Professional and Technical	Medical Practitioner, Grade A (Casualty Officer)	Woodstock Hospital, Woodstock	£500—600—660—720 p.a.	31.12.54

Applications to be addressed to the Medical Superintendent. The conditions of service are prescribed in terms of Hospital Board Service Ordinance No. 19 of 1941, as amended, and the regulations framed thereunder.

In addition to the scale of salary indicated a cost-of-living allowance at rates prescribed from time to time by the Administrator is payable to whole-time officials and employees.

The successful candidate, if not already in the Hospital Board Service, will be required to submit satisfactory birth and health certificates.

Application must be made on the prescribed form (Staff 23) which is obtainable from the Director of Hospital Services, P.O. Box 2060, Cape Town, or from the Medical Superintendent of any Provincial Hospital or Secretary of any School Board in the Cape Province.

Candidates must state the earliest date on which they can assume duty.

M129346

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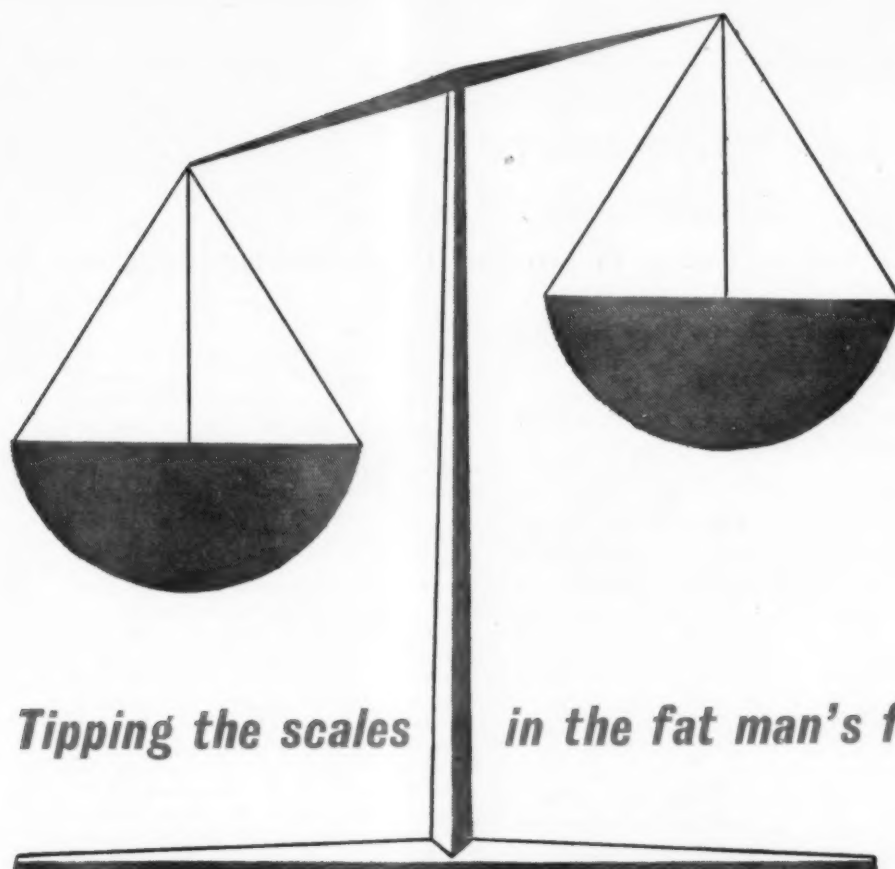
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- 2 The vitamin is in its natural state.*
- 3 Ribena is very well tolerated even by sensitive stomachs. It is completely free from all cellular structure. It is suitable for infants almost from birth, for peptic ulcer cases, and for women suffering from "morning sickness"; they can take it when almost everything else increases discomfort.
- 4 In addition to its therapeutic values, it is delicious in its own right as sweet blackcurrant syrup.

* Following reports of unsatisfactory response to the therapeutic use of synthetic ascorbic acid in peptic ulcer cases, controlled tests using Ribena were instituted at various large British hospitals, with striking results.

Clinical experience has also shown that in ulcerative gingivitis, the routine use of Ribena as an adjunct to local therapy has given more satisfactory results than that of the synthetic vitamin.

The superiority is presumably due to the presence of other factors of the Vitamin-C complex, possibly the Vitamin P, as well as mineral elements.

Therapeutic uses

Ribena is recommended for all conditions requiring Vitamin-C implementation: namely, as a natural and rapid restorative from fatigue; for increasing resistance to local infection and colds; for expectant and nursing mothers; for infants from birth; for children and adolescents; in many dental conditions; in peptic ulcer cases; in fractures and wounds; in blood dyscrasias and haemorrhagic states; in infections and fevers; and in many skin disorders.

Reports for doctors overseas

The makers of Ribena co-operated extensively with the Ministries of Food and Health during the war, a co-operation which still goes on to some extent even now. The Royal Forest Factory has attached to it a series of very fine laboratories where research into fruit juices and vitamins is conducted to an academic level, under the direction of an expert lately in charge of the Fruit Products Section of the University of Bristol Agricultural Research Station. Reports of much of the work done are available, on application, to doctors and scientists overseas. These are likely to be of particular interest now that Ribena is being extensively exported.

Send for further information. A booklet entitled "Blackcurrant Juice in Modern Therapy: Natural Vitamin C" will be forwarded to you with pleasure; also details of a number of controlled tests made on the use of Vitamin C, if you will write to:—

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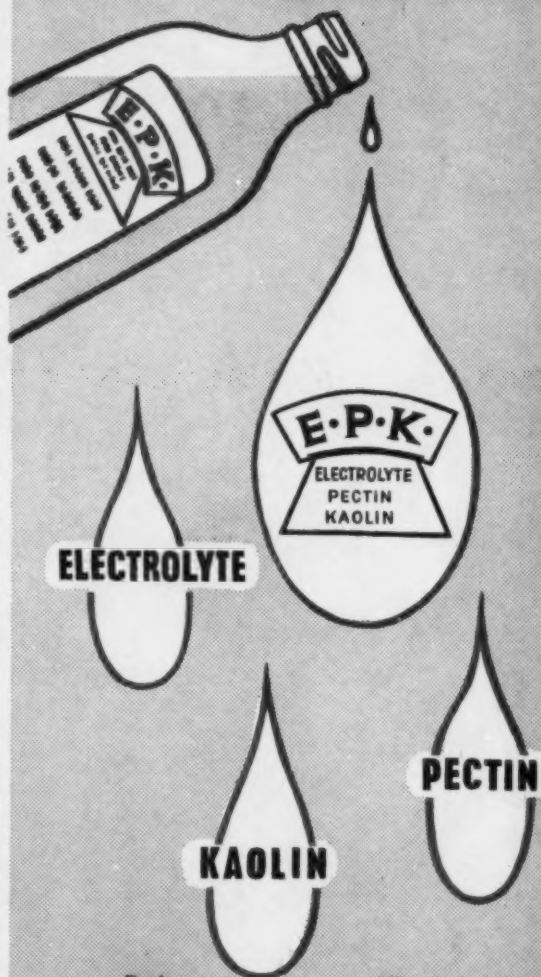
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